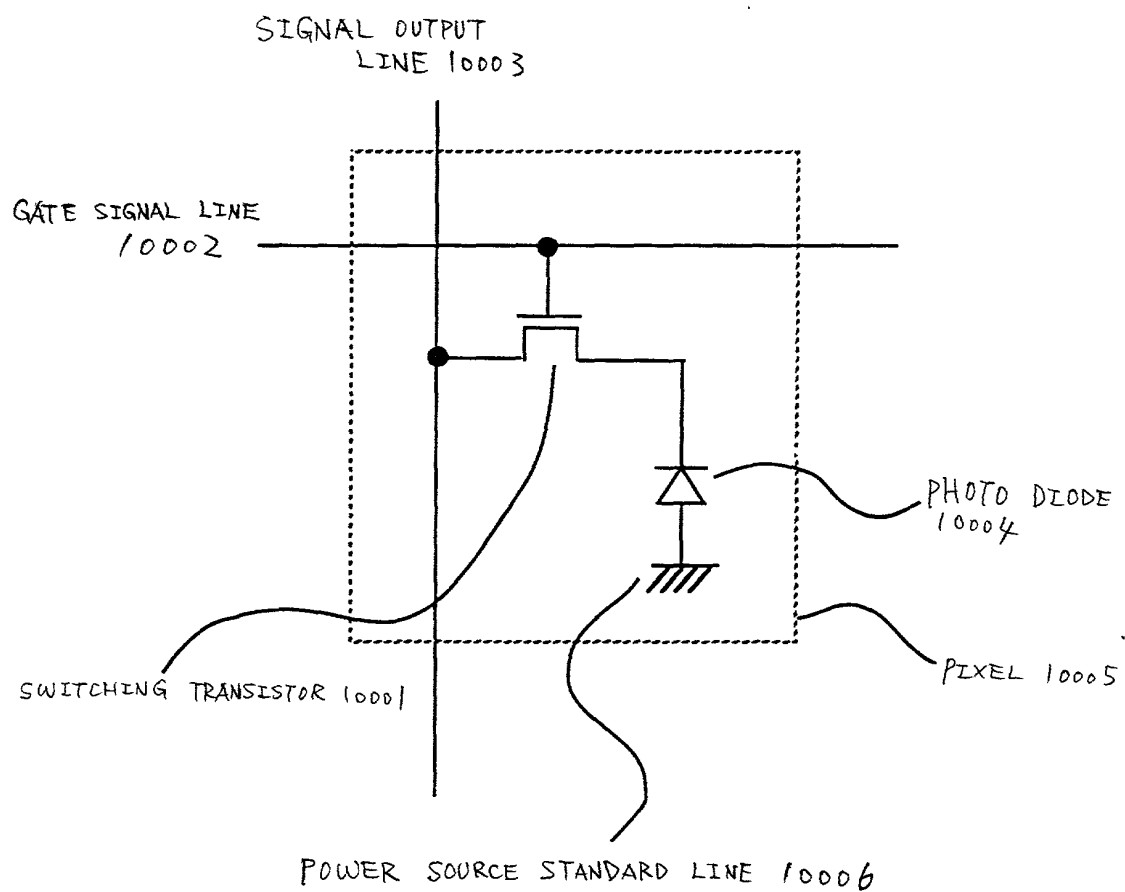
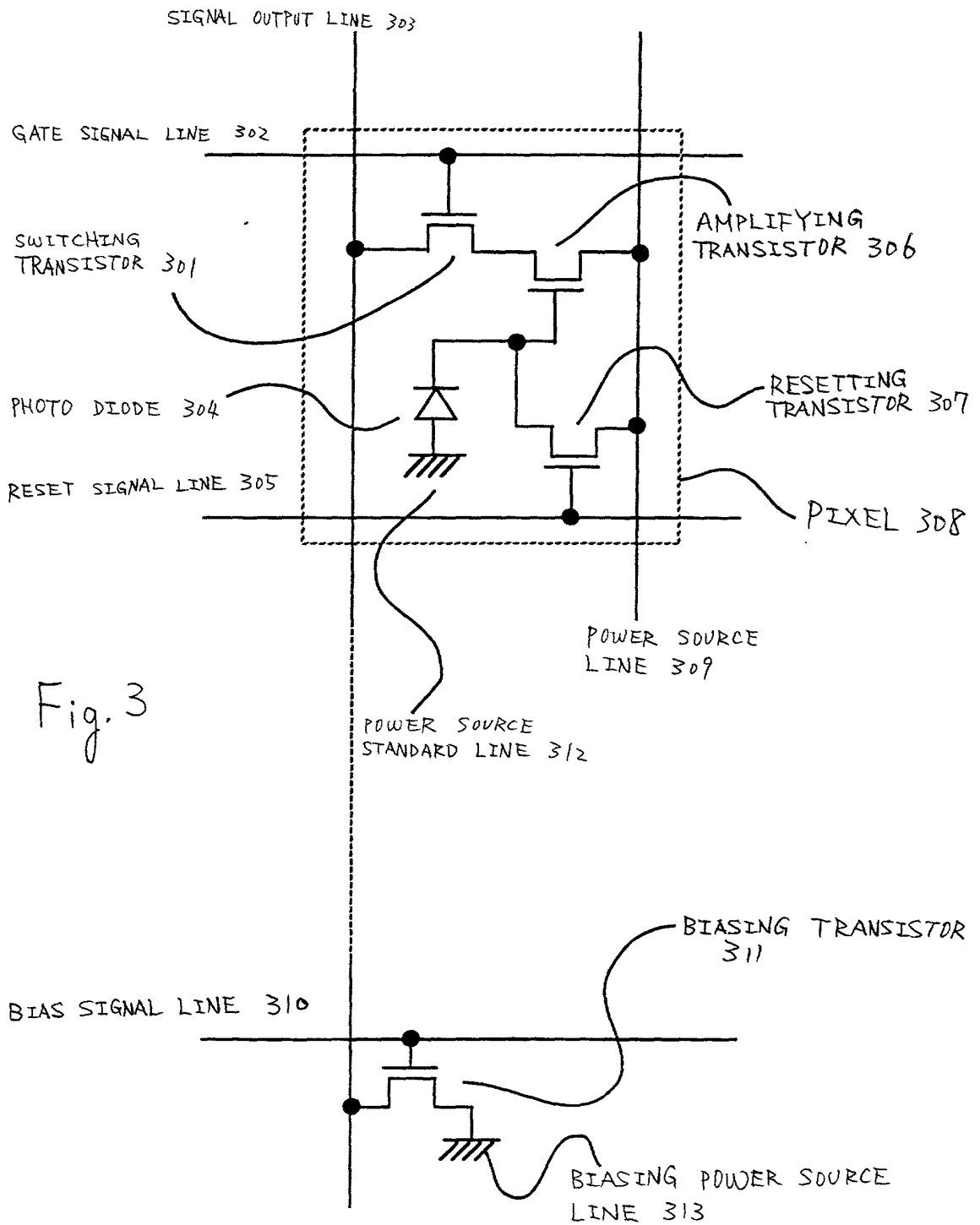
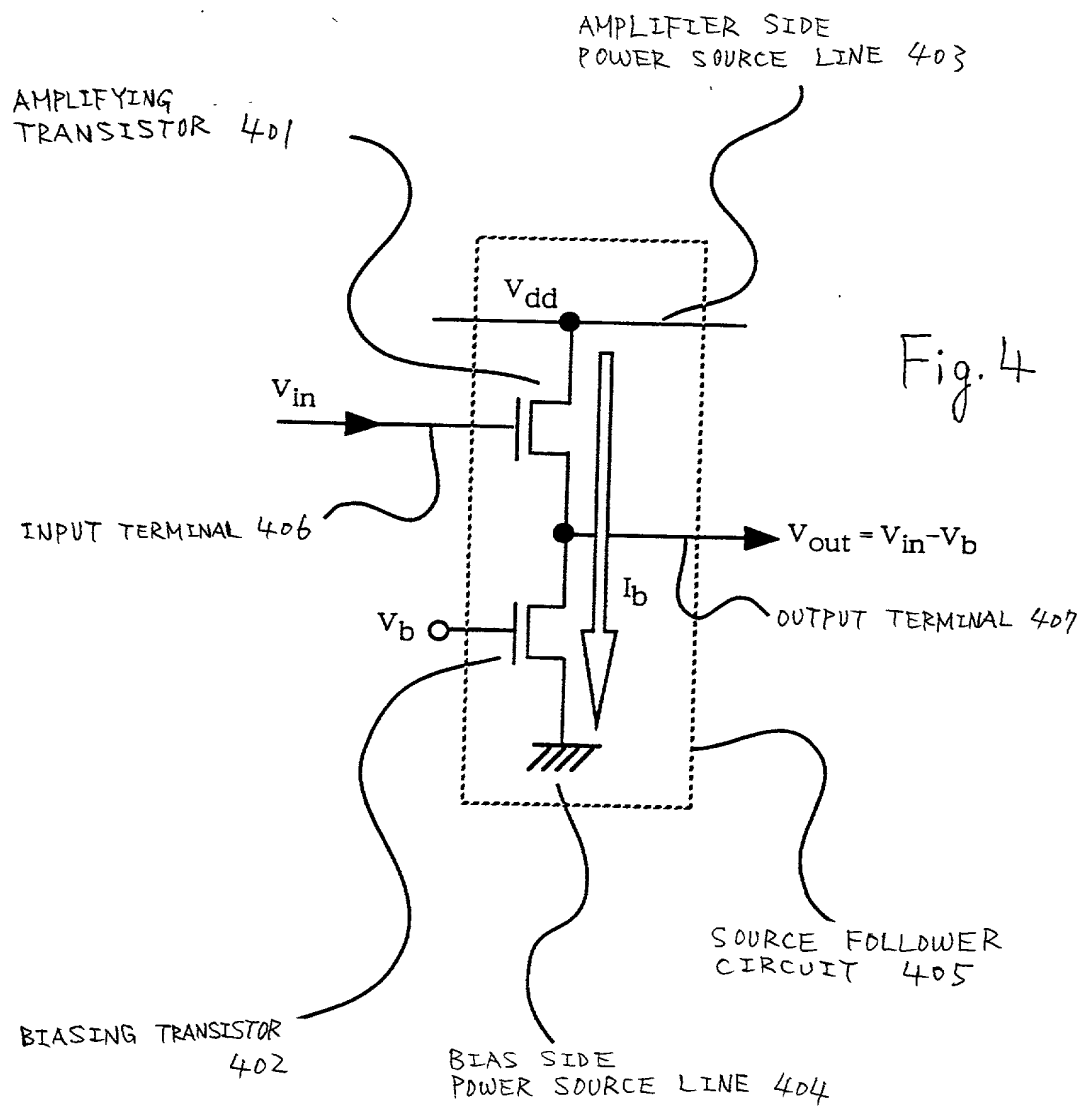


Fig. 2







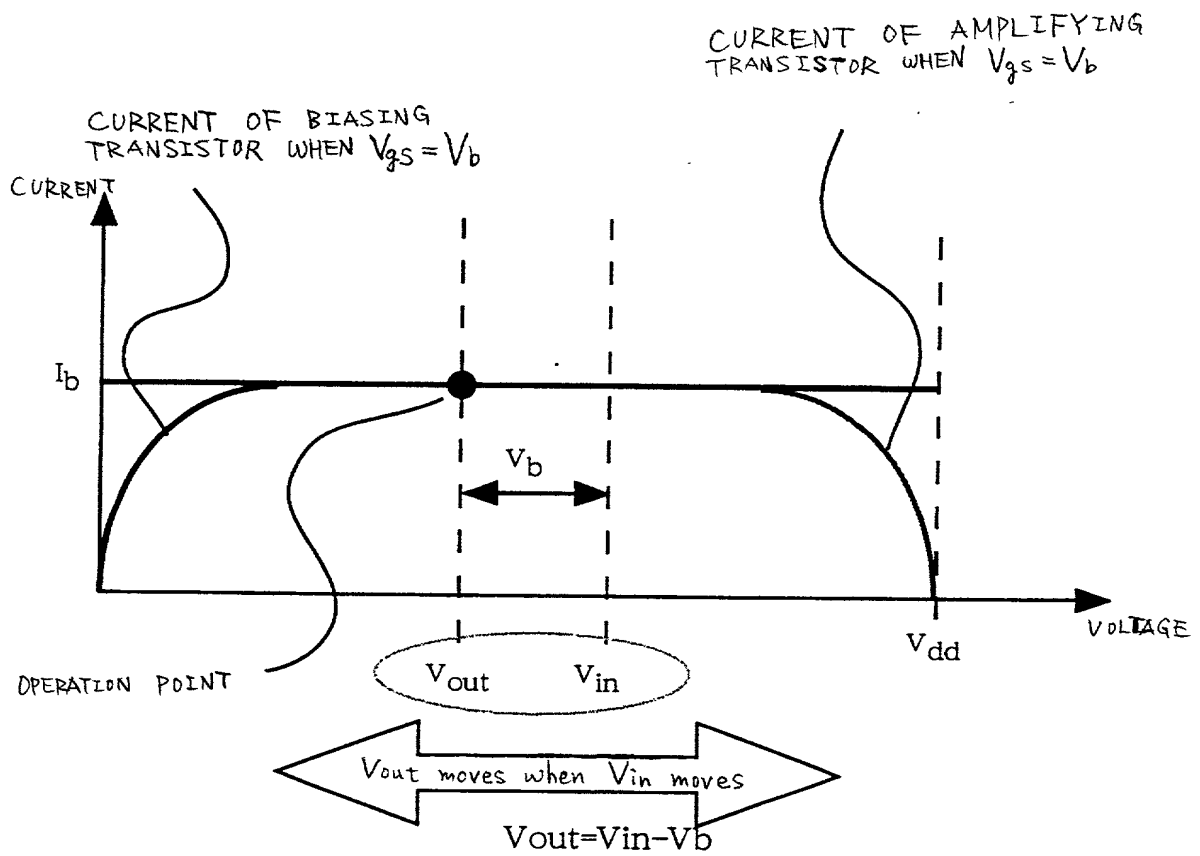


Fig. 5

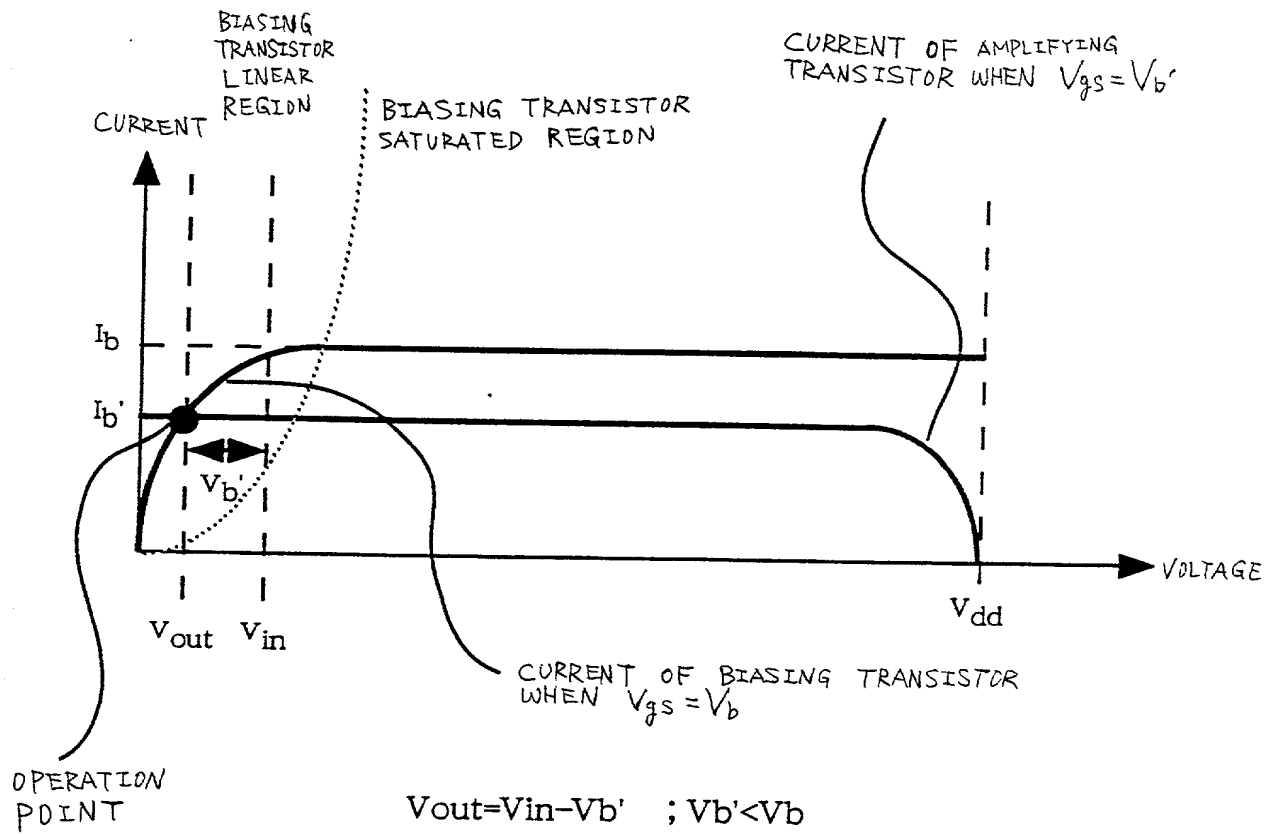


Fig. 6

NON-LINEAR

$$V_{out} = V_{in} - V_{b'}$$

; $V_{b'}$ varies with V_{in}

LINEAR REGION

$$V_{out} = V_{in} - V_b$$

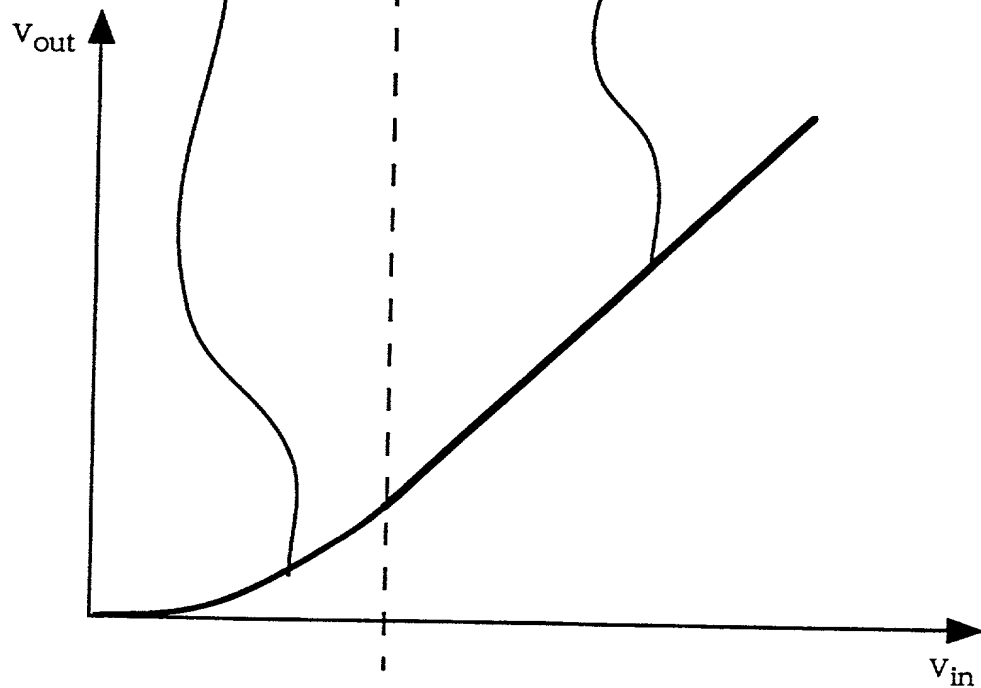
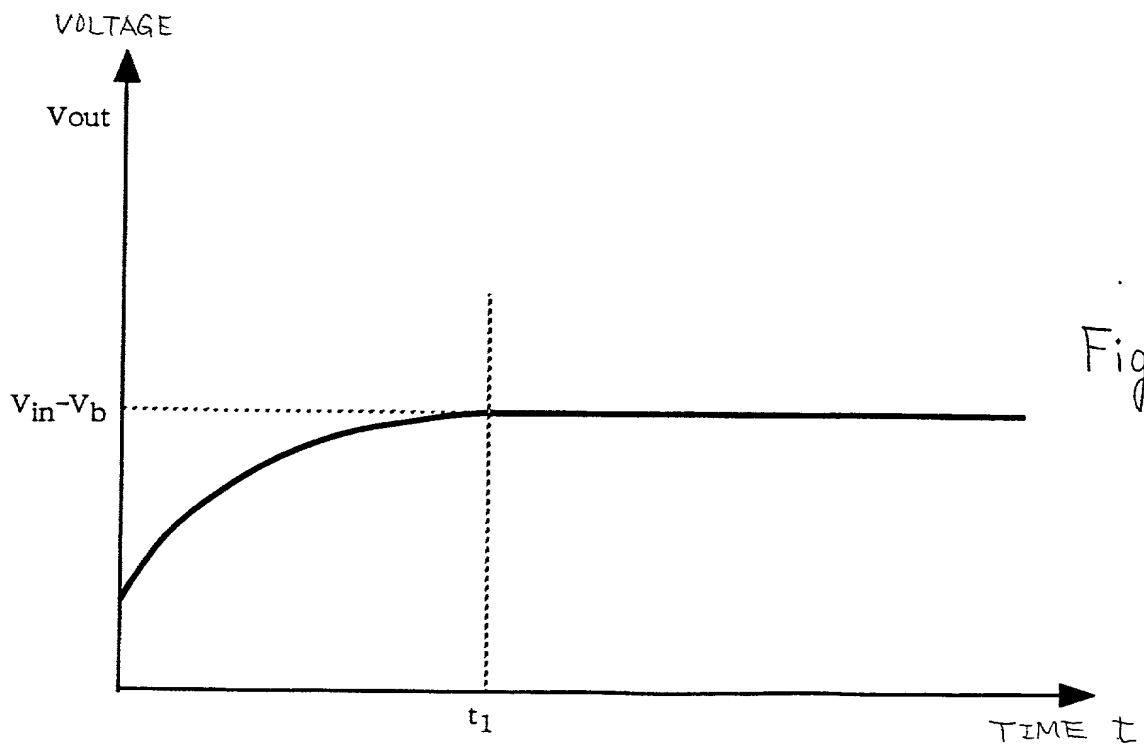
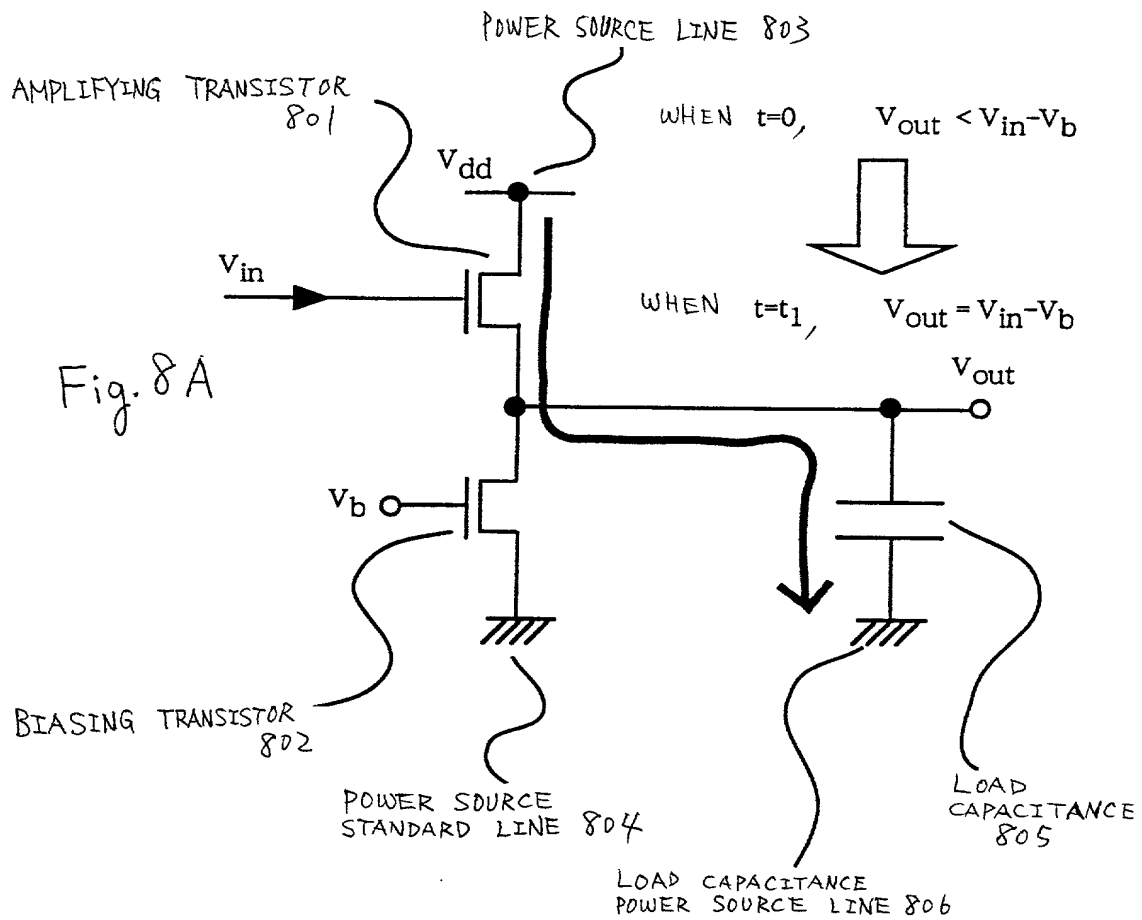
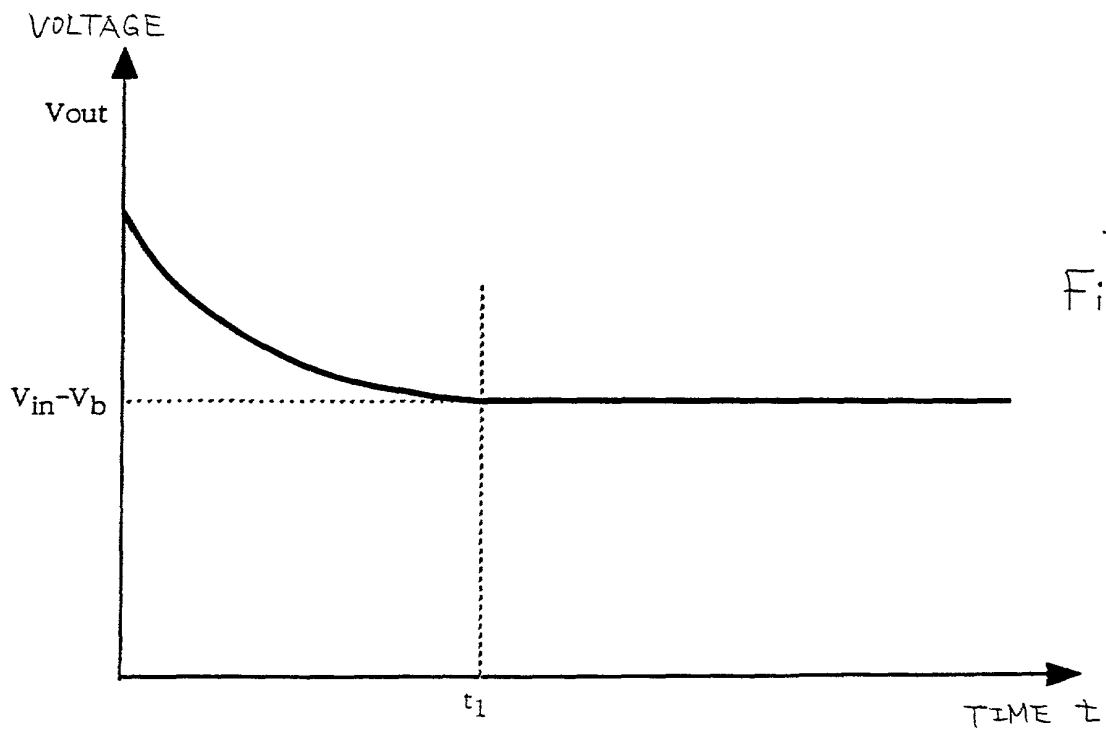
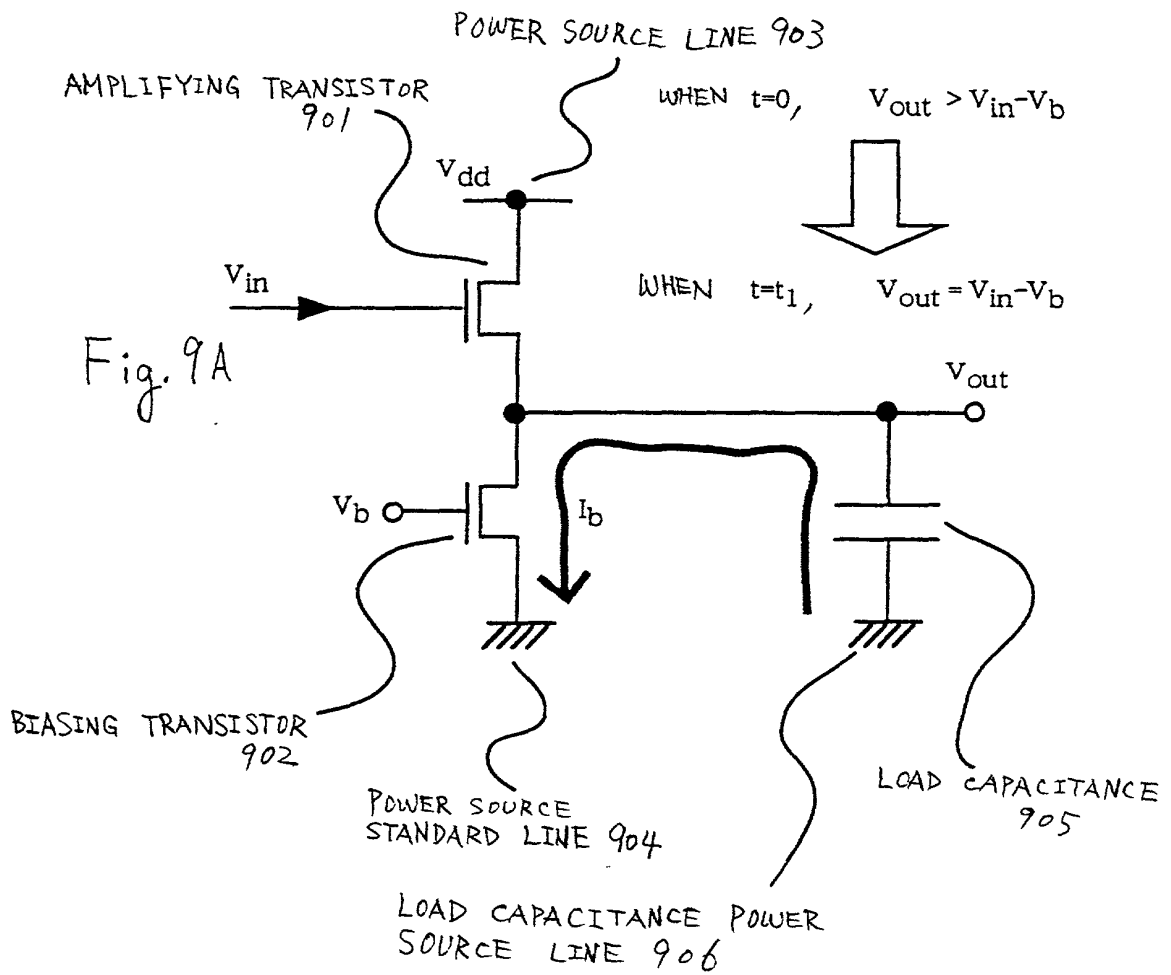


Fig. 7





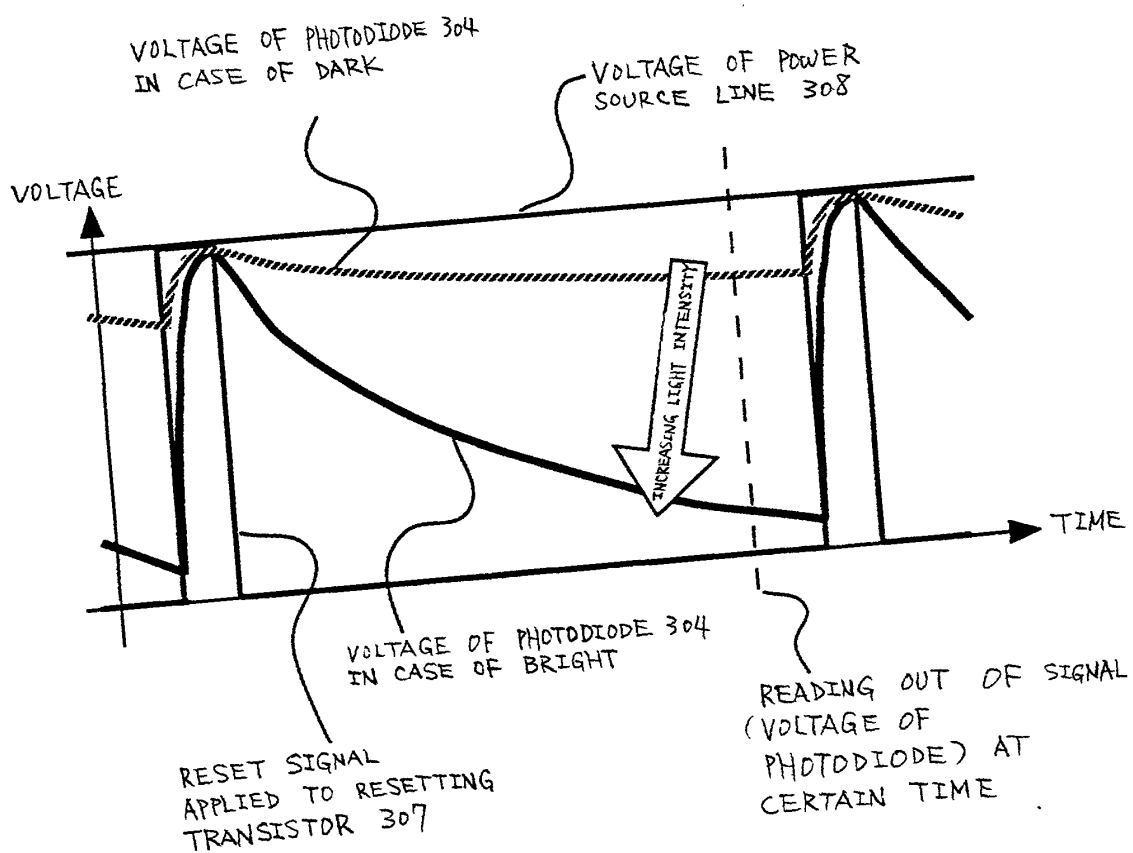
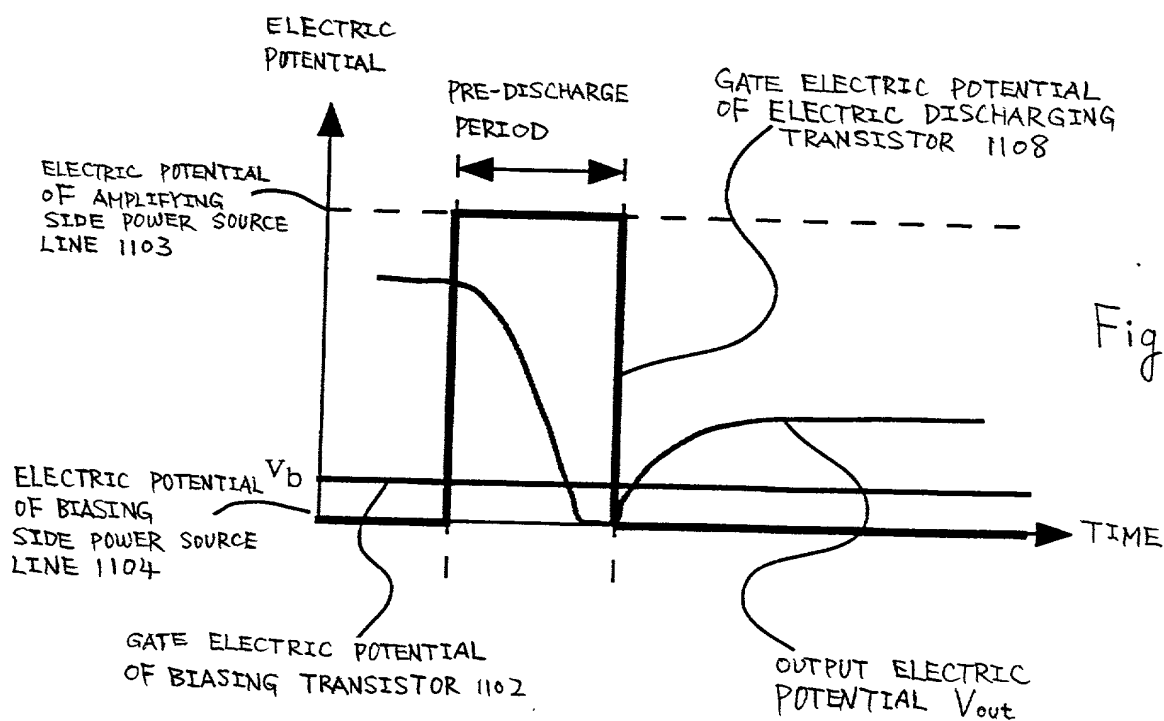
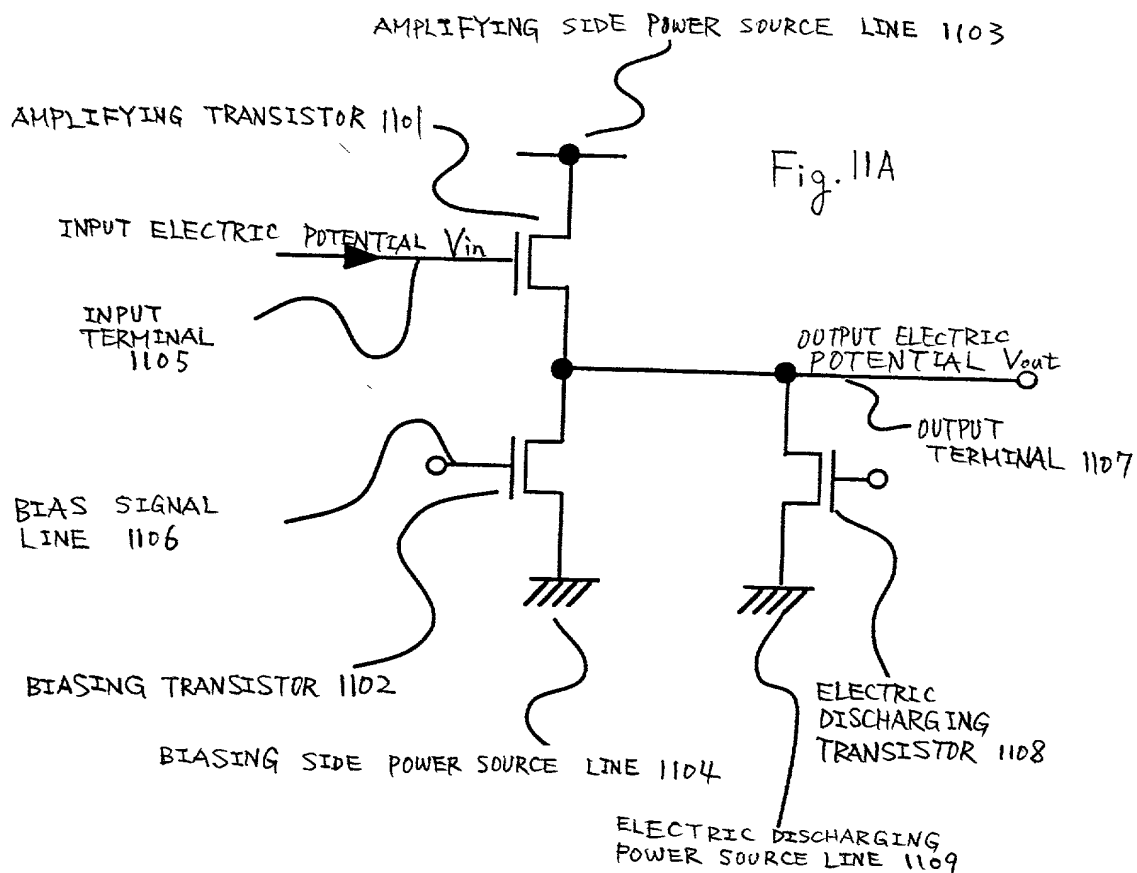
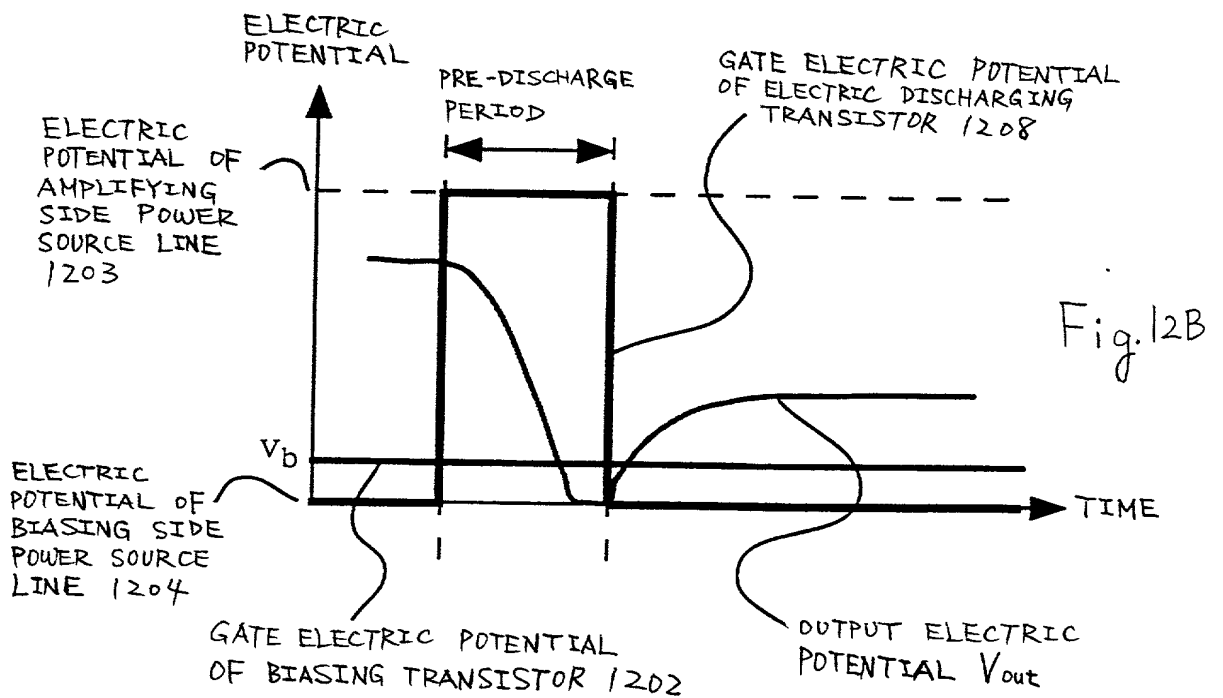
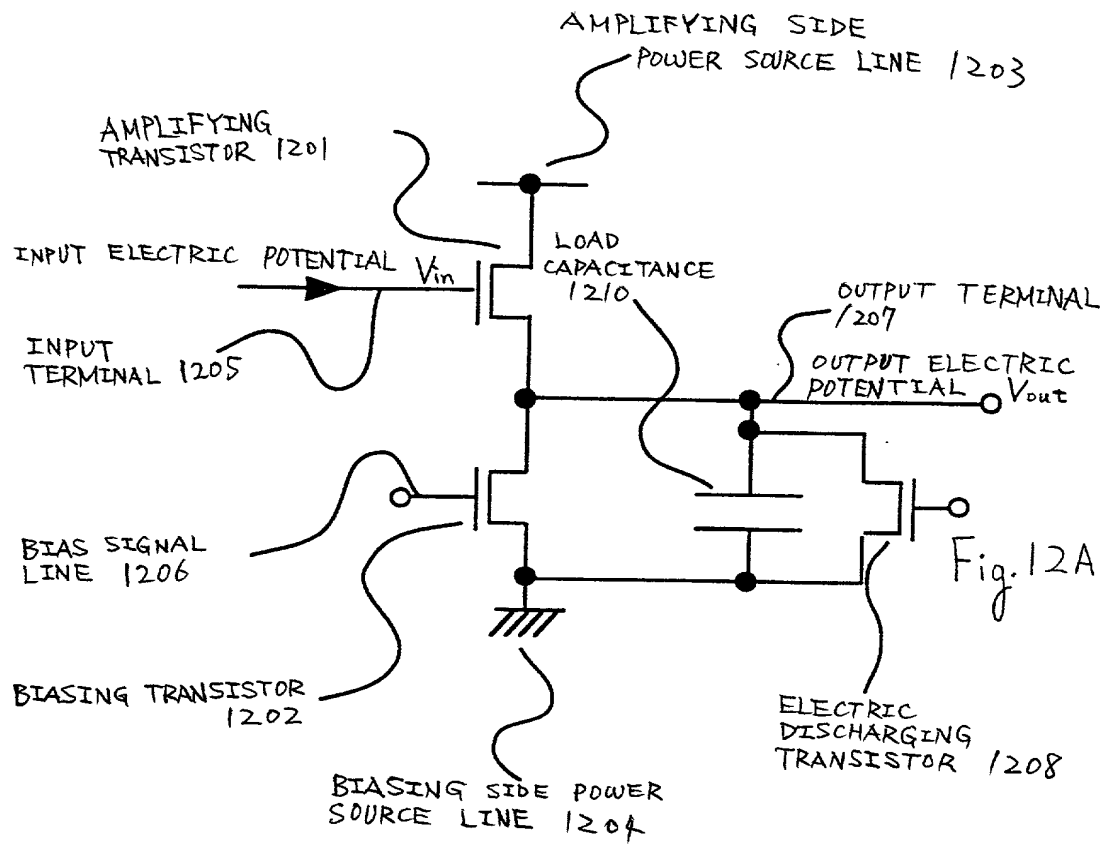
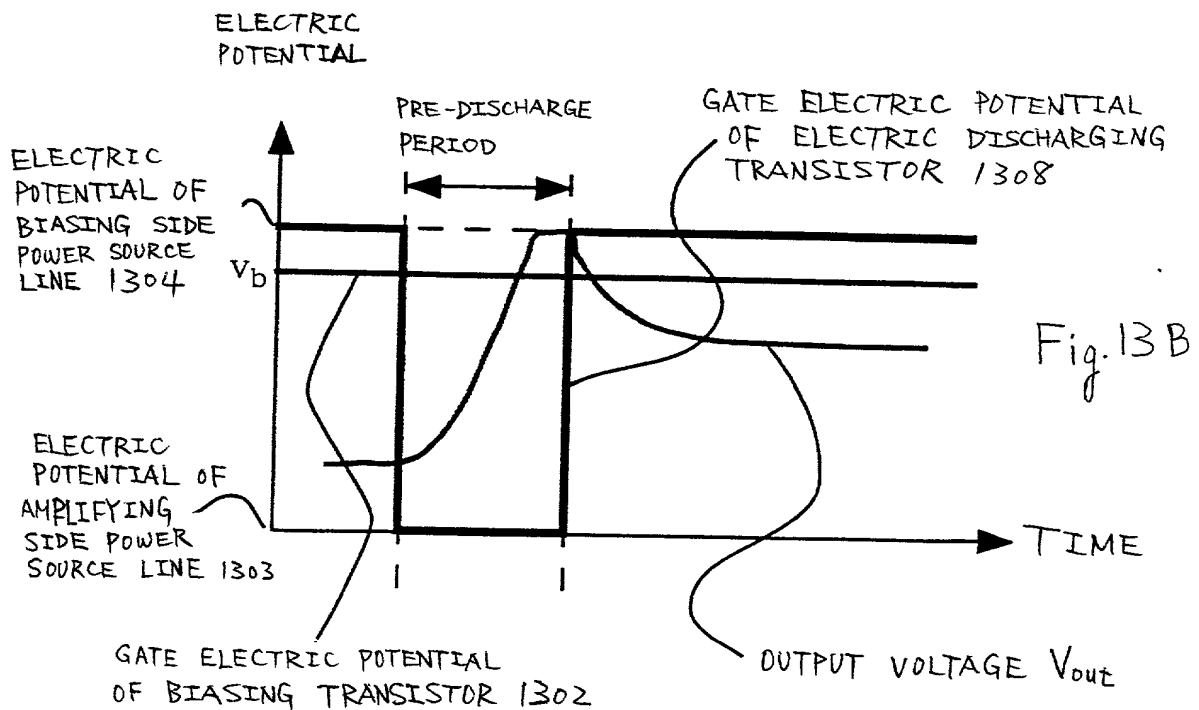
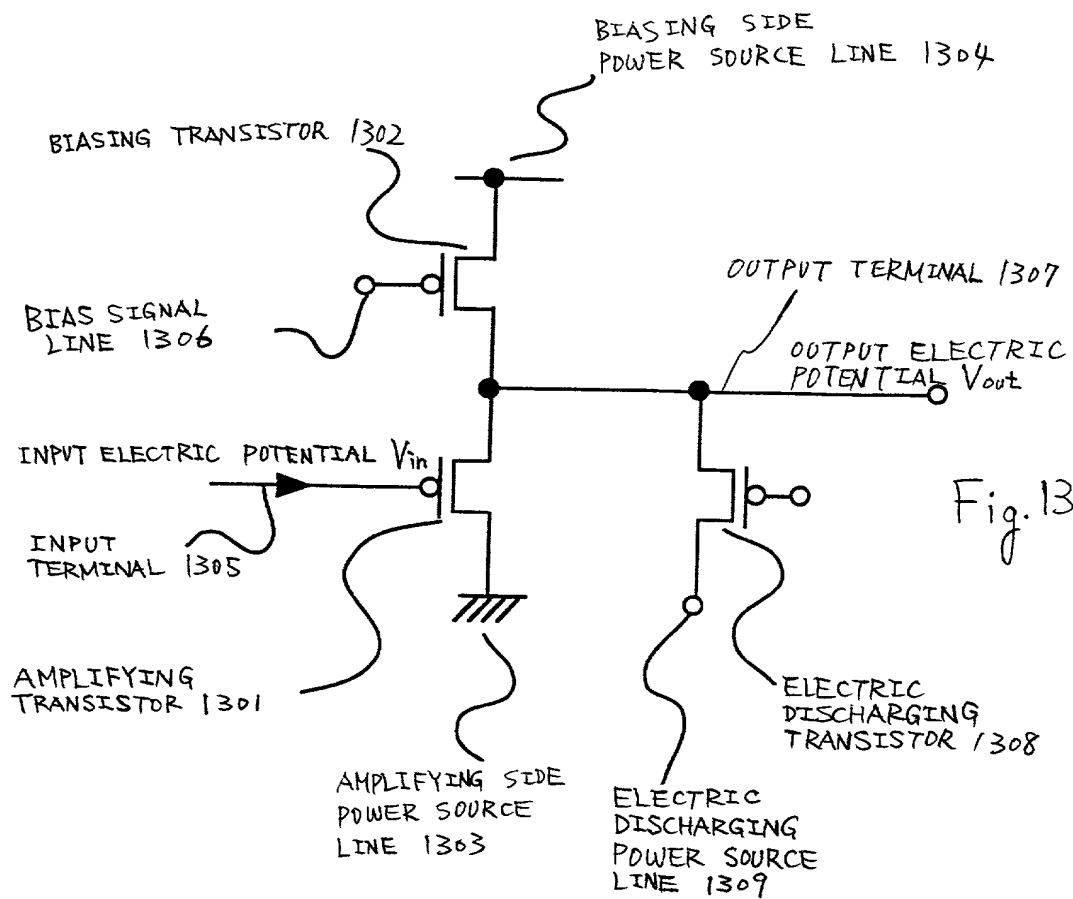
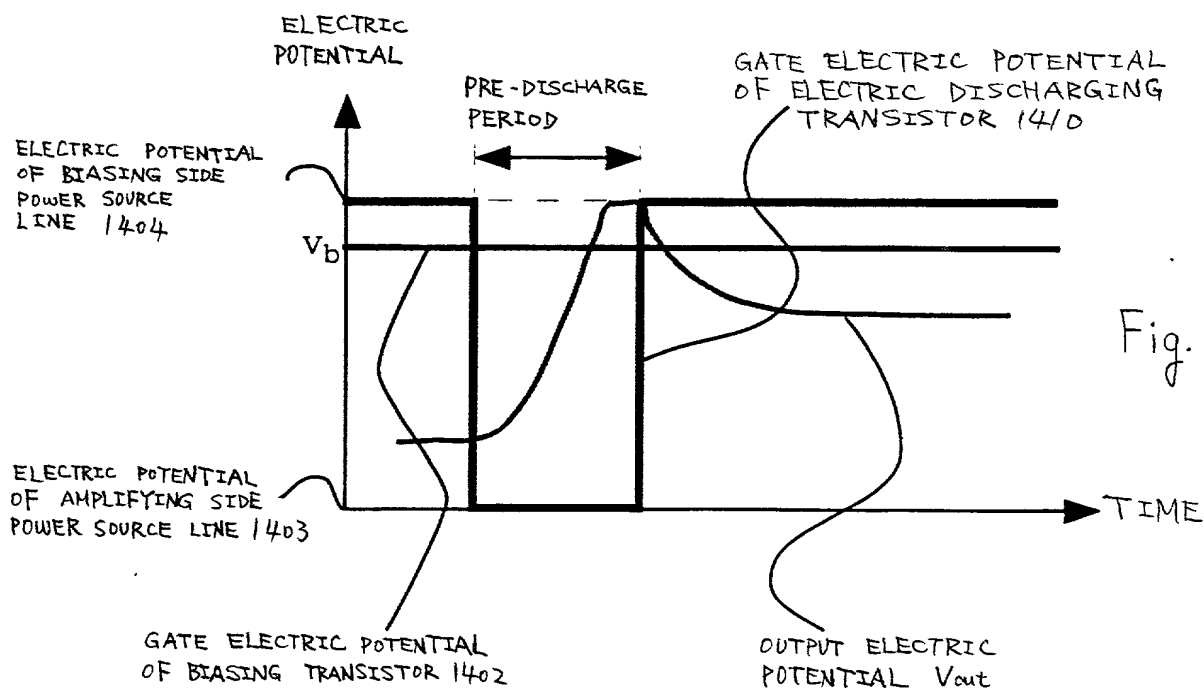
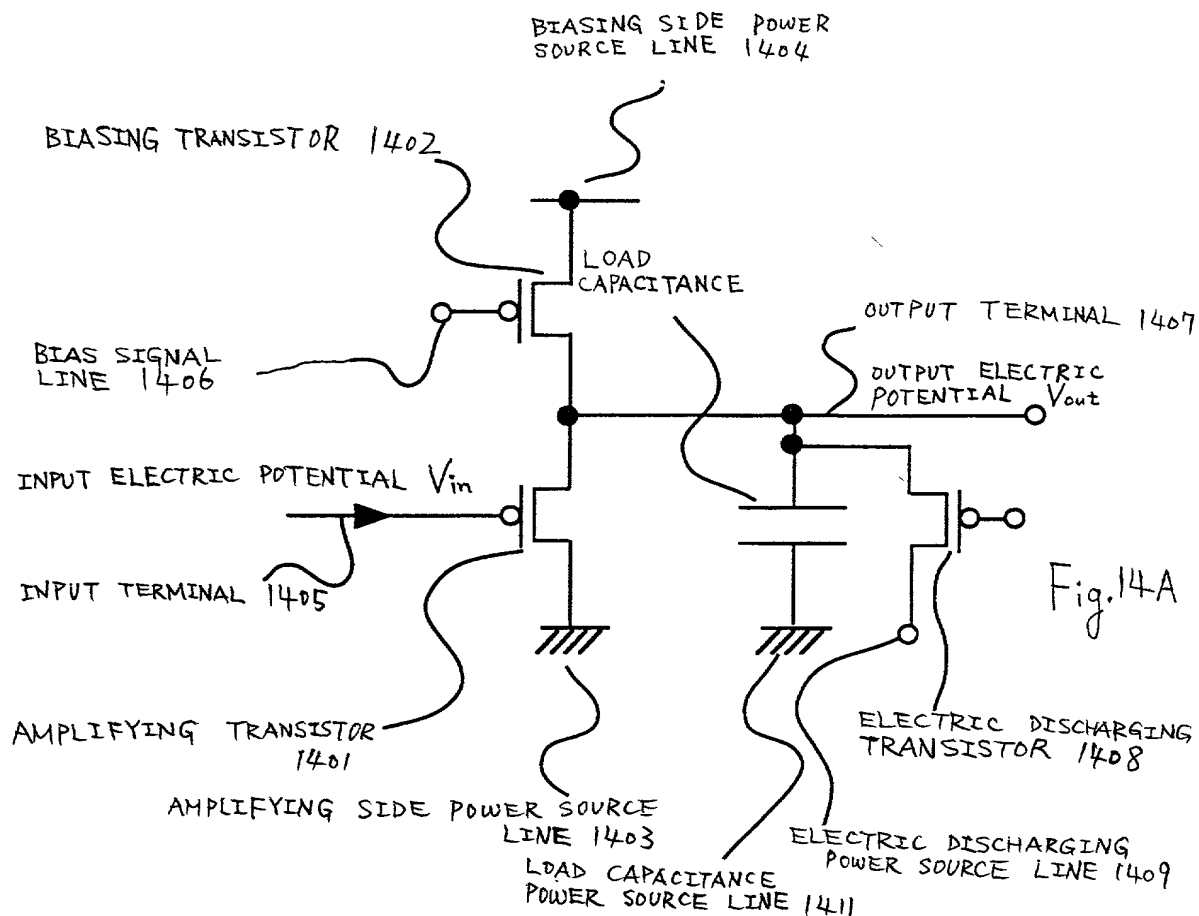


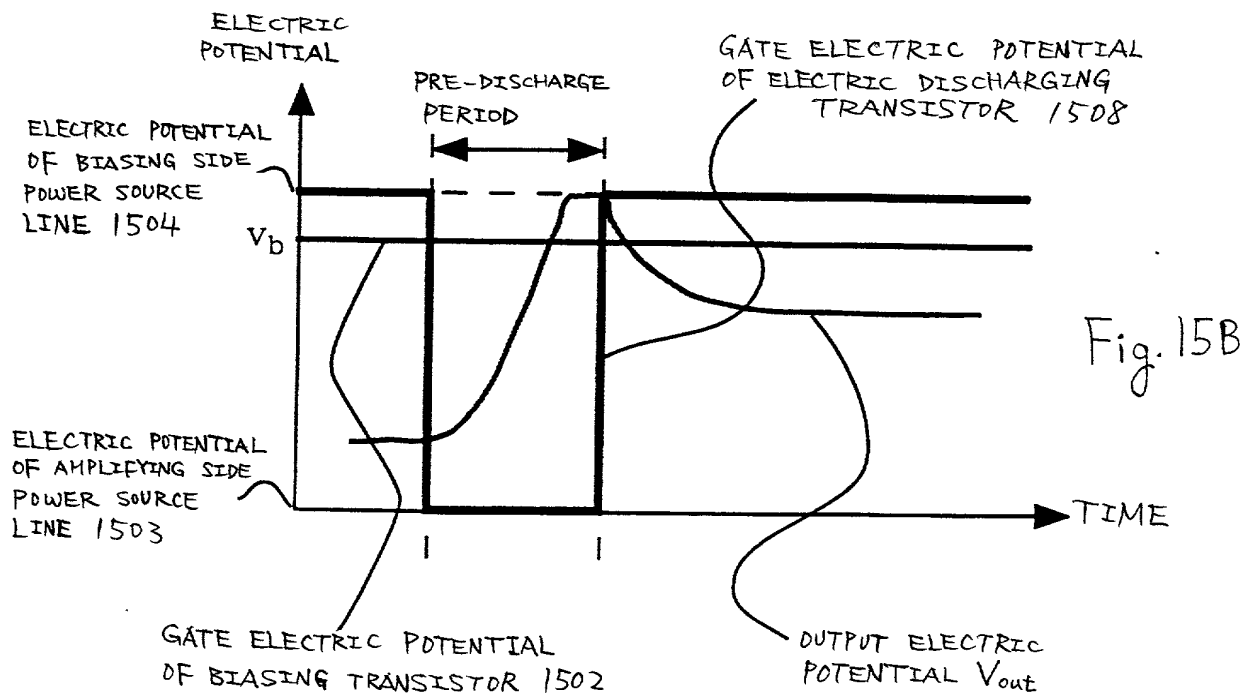
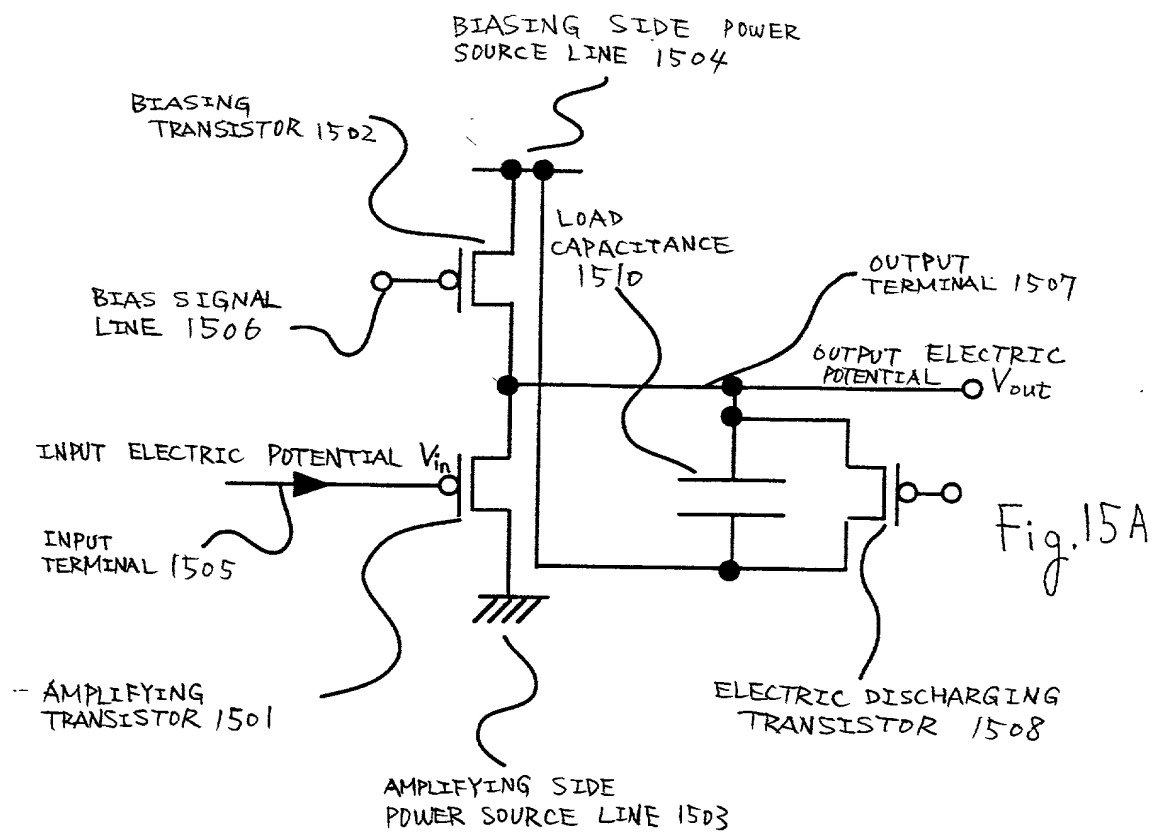
Fig. 10

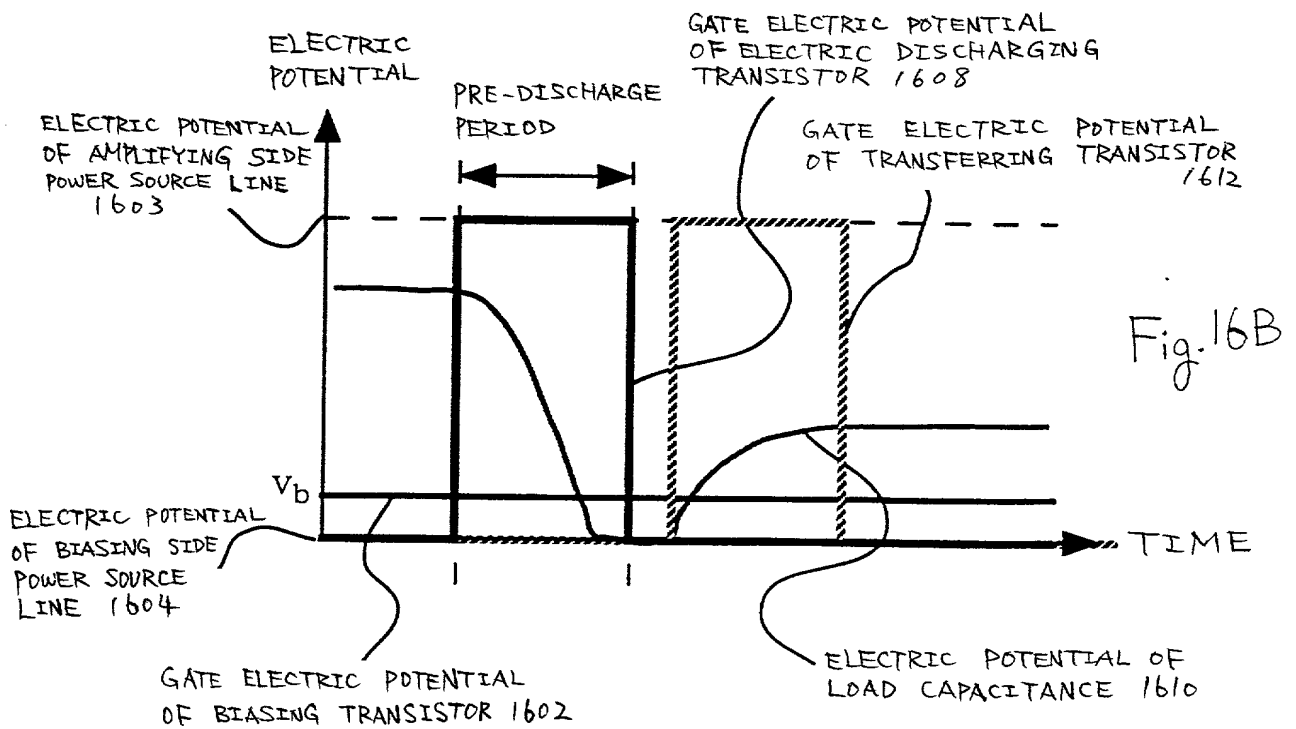
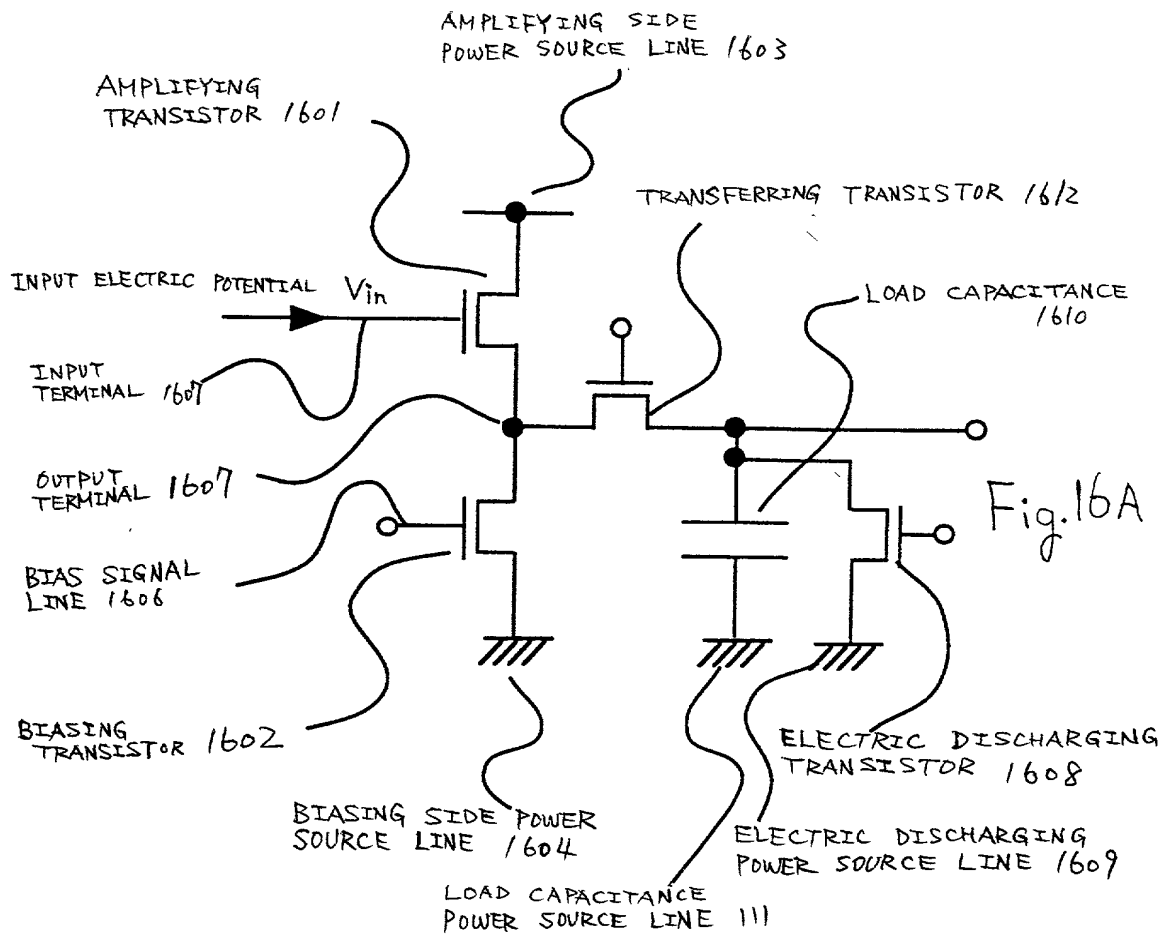


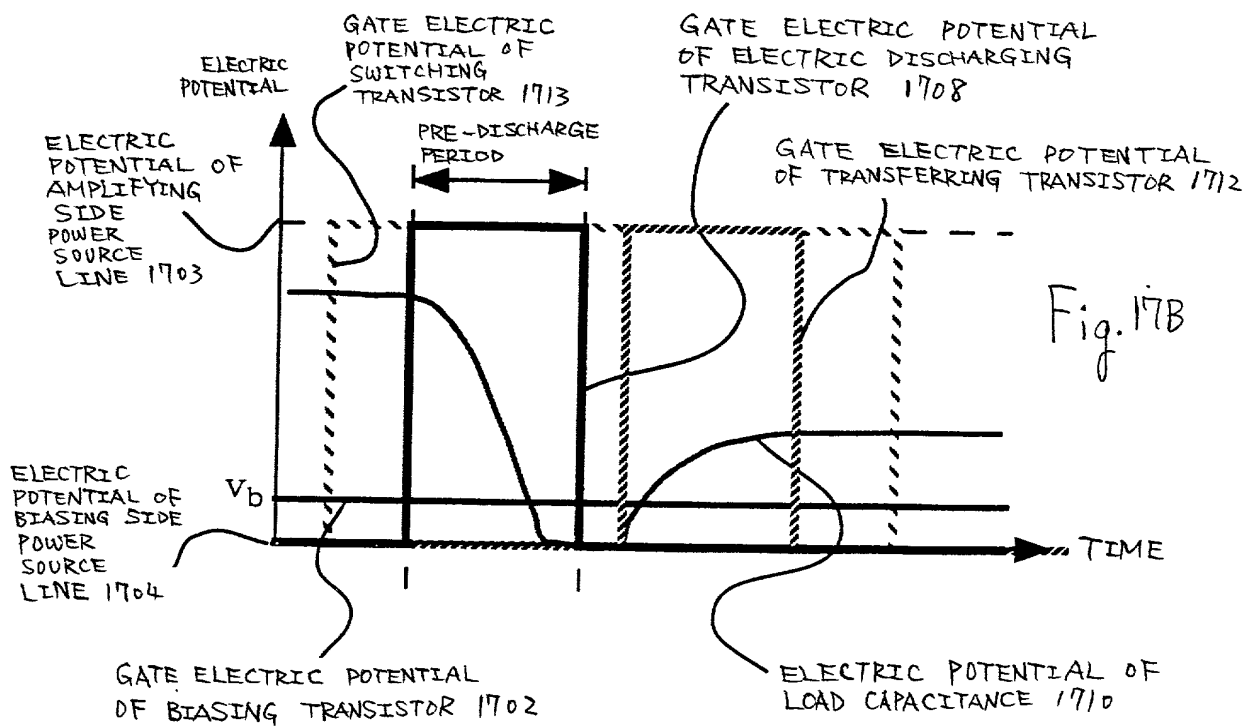
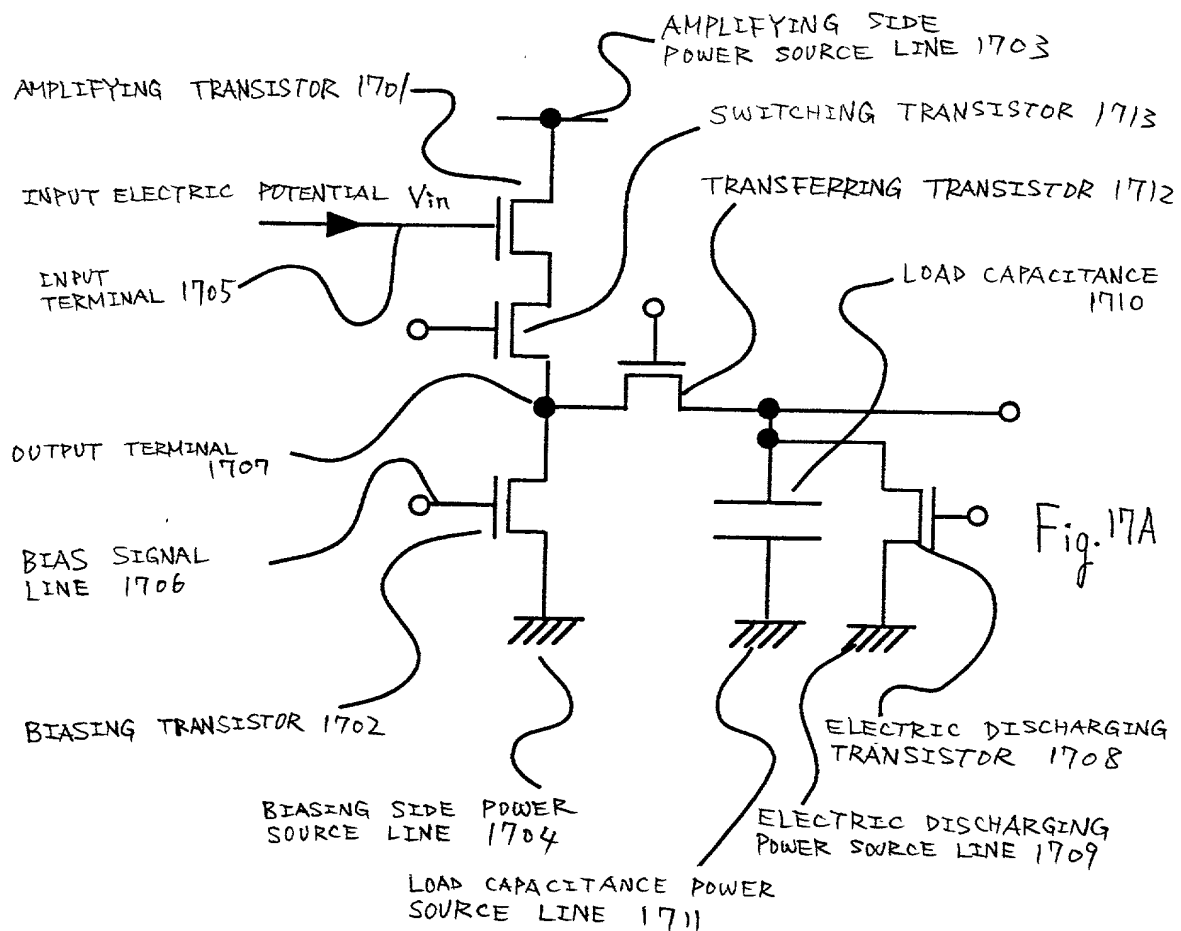


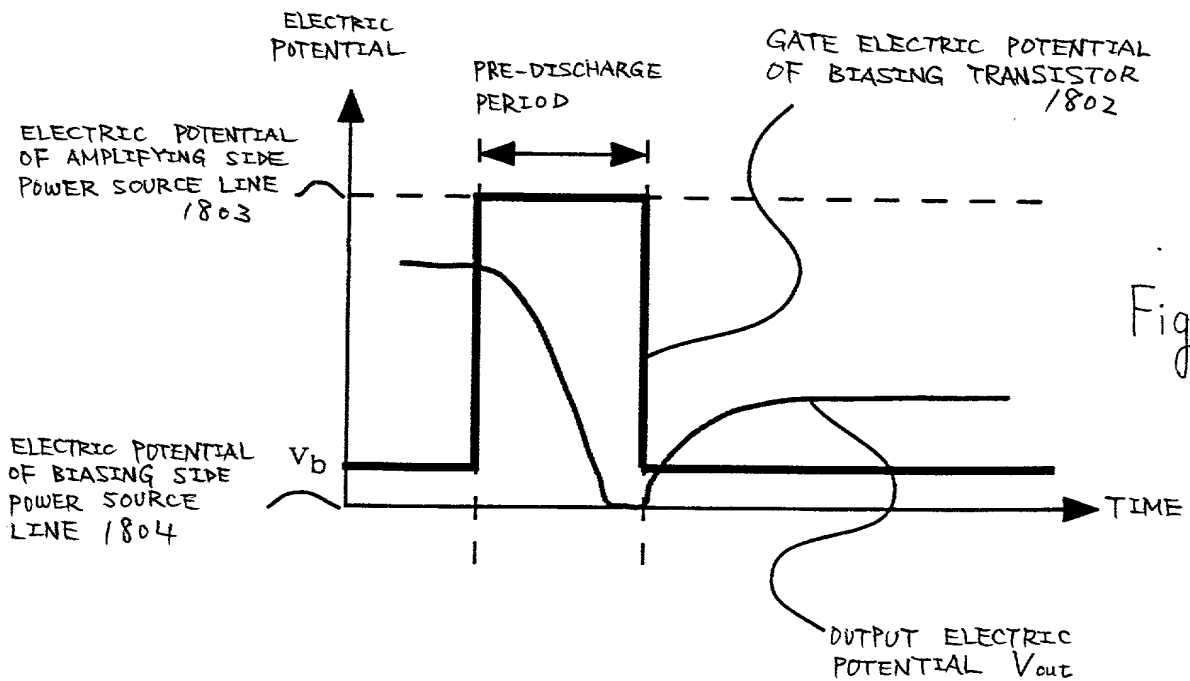
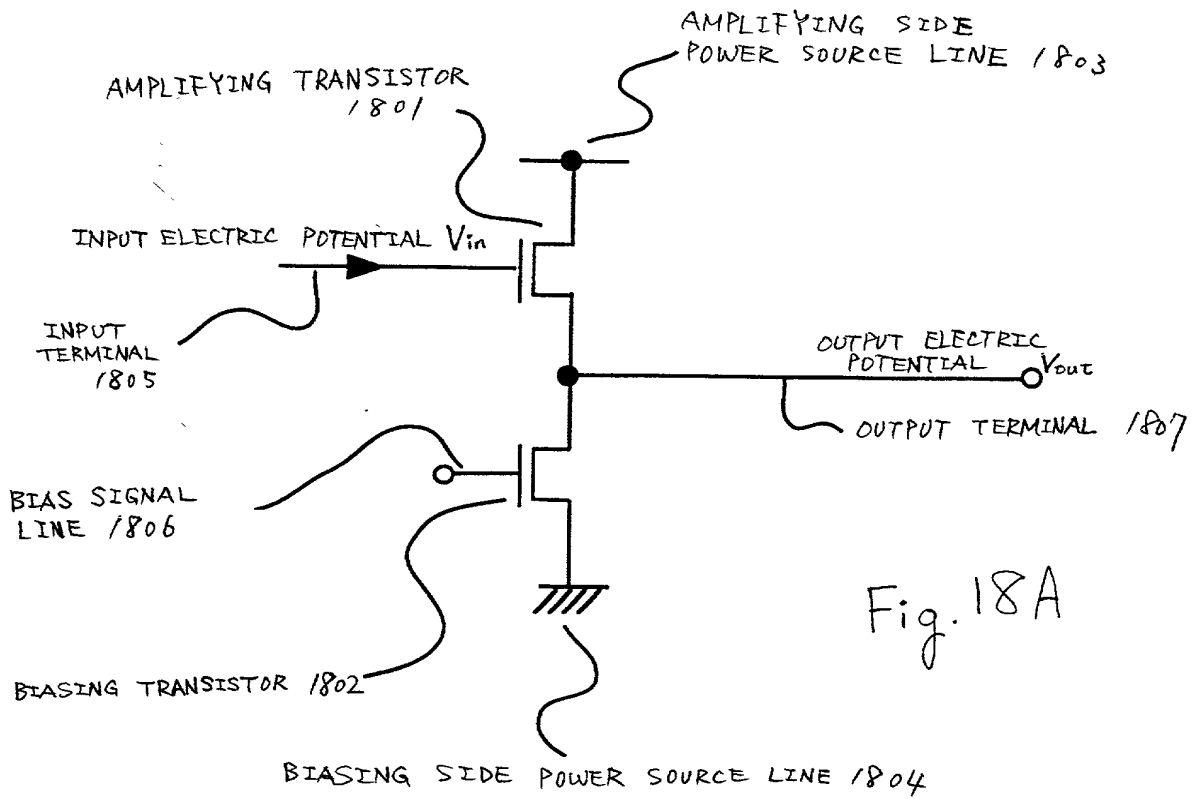


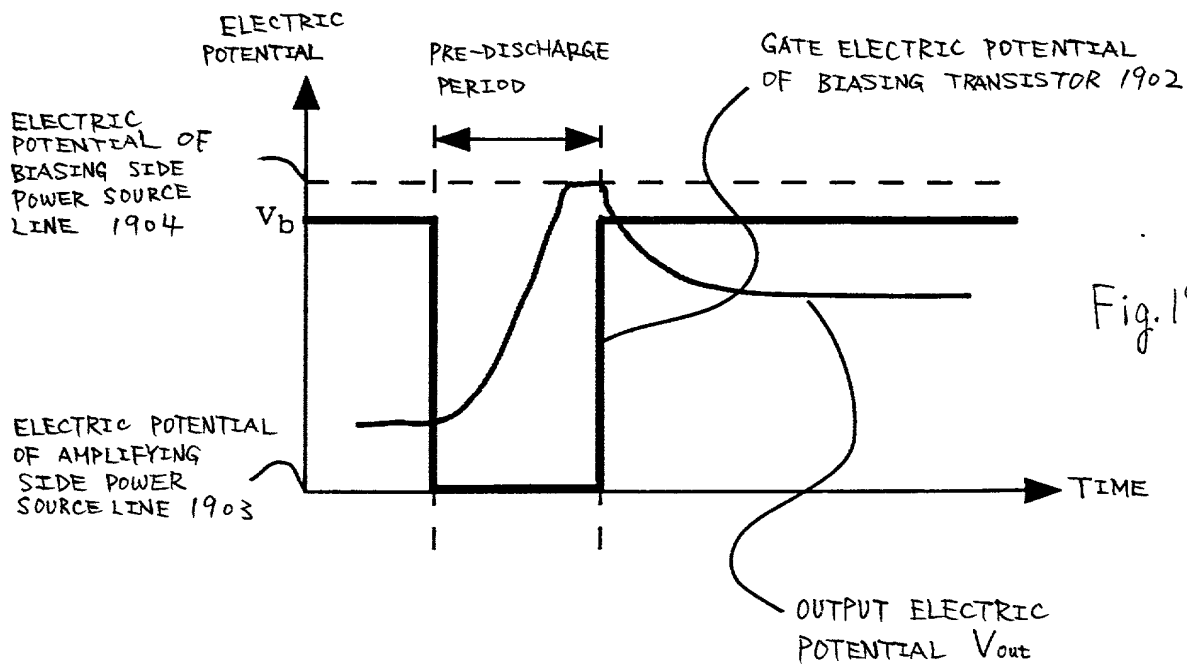
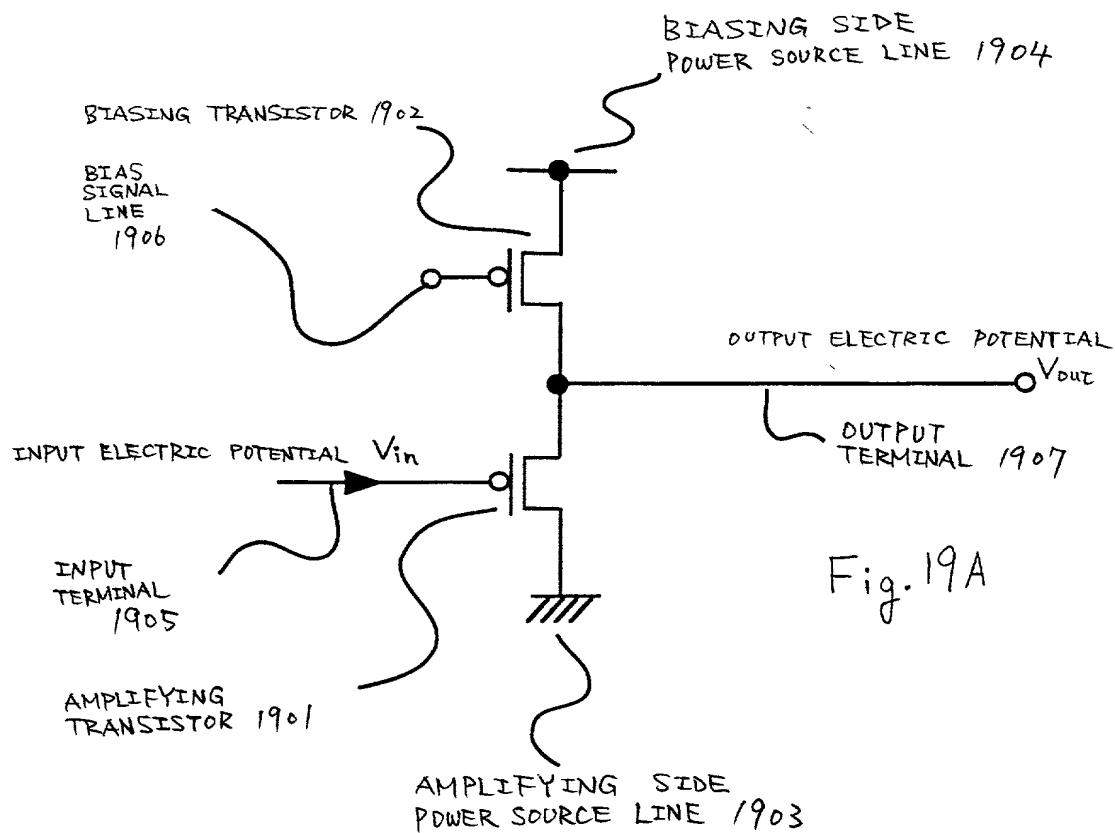












J-TH ROW PERIPHERAL
PORTION CIRCUIT
2009

SIGNAL OUTPUT LINE DRIVER CIRCUIT 2001

SAMPLE HOLD AND SIGNAL
PROCESSING CIRCUIT 2002

BIASING
CIRCUIT
2003

FINAL OUTPUT
AMPLIFYING
CIRCUIT 2004

Fig. 20

GATE SIGNAL LINE
DRIVER CIRCUIT
2006

J-TH ROW POWER
SOURCE LINE

I-TH LINE GATE
SIGNAL LINE

I-th LINE j-th ROW PIXEL
PORTION CIRCUIT 2008

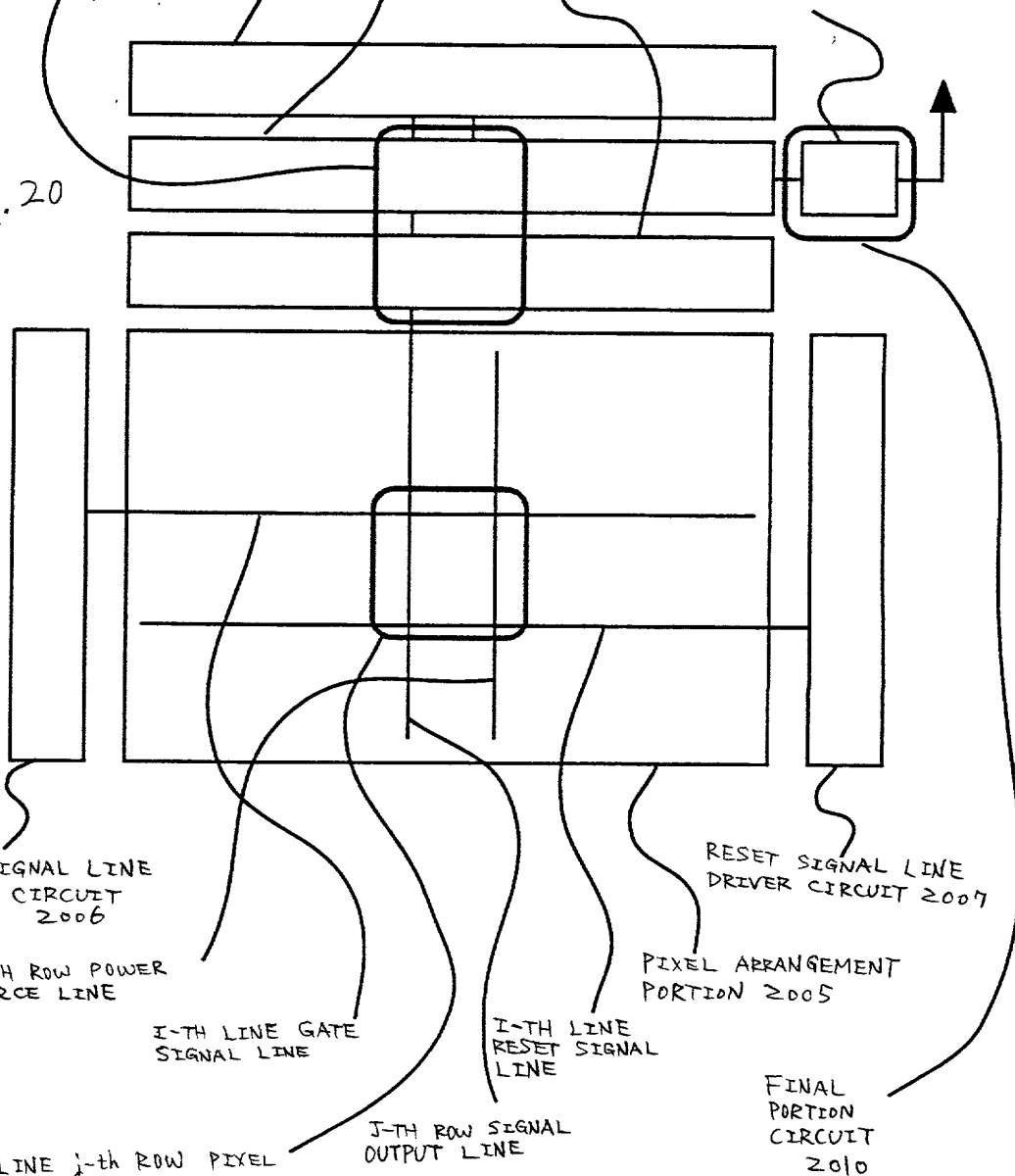
J-TH ROW SIGNAL
OUTPUT LINE

I-TH LINE
RESET SIGNAL
LINE

PIXEL ARRANGEMENT
PORTION 2005

RESET SIGNAL LINE
DRIVER CIRCUIT 2007

FINAL
PORTION
CIRCUIT
2010



J-TH ROW SIGNAL
OUTPUT LINE 2103

I-TH LINE GATE
SIGNAL LINE 2102

SWITCHING
TRANSISTOR
2101

PHOTO DIODE
2104

I-TH LINE RESETTNG
SIGNAL LINE 2105

POWER SOURCE
STANDARD LINE
2112

AMPLIFYING
TRANSISTOR
2106

RESETTNG
TRANSISTOR
2107

I-TH LINE
J-TH ROW
PIXEL PORTION
CIRCUIT 2008

J-TH ROW POWER
SOURCE LINE 2109

Fig. 21

Fig. 21 is a schematic diagram of a pixel portion circuit 2008. The circuit includes a photo diode 2104, a switching transistor 2101, an amplifying transistor 2106, and a resetting transistor 2107. The photo diode 2104 is connected to a power source standard line 2112 and a resetting transistor 2107. The switching transistor 2101 is connected to an I-th line gate signal line 2102 and a J-th row power source line 2109. The amplifying transistor 2106 is connected to a J-th row signal output line 2103 and a J-th row power source line 2109. The resetting transistor 2107 is connected to an I-th line resetting signal line 2105 and a J-th row power source line 2109. The circuit is enclosed in a rectangular box representing the pixel portion circuit 2008.

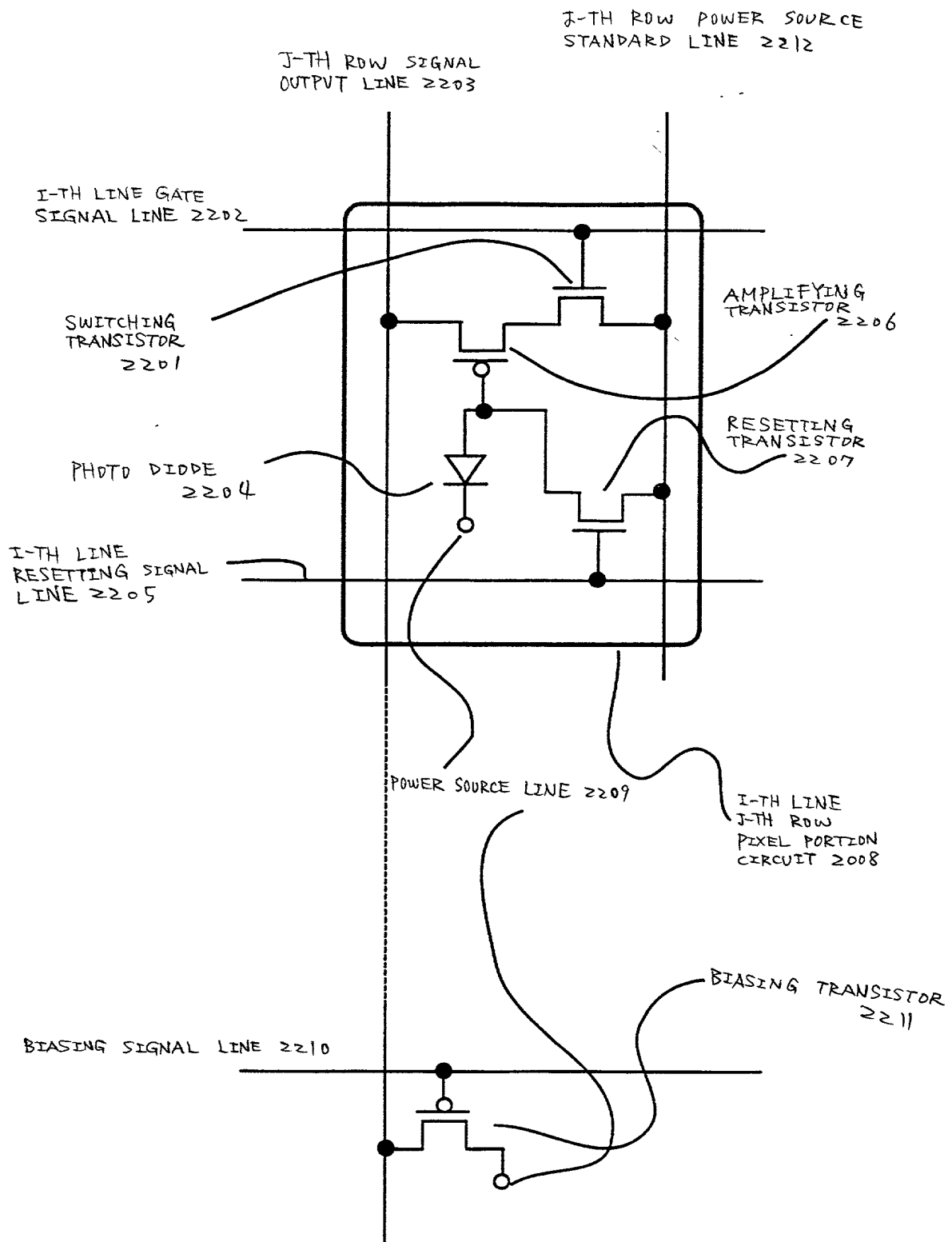


Fig. 22

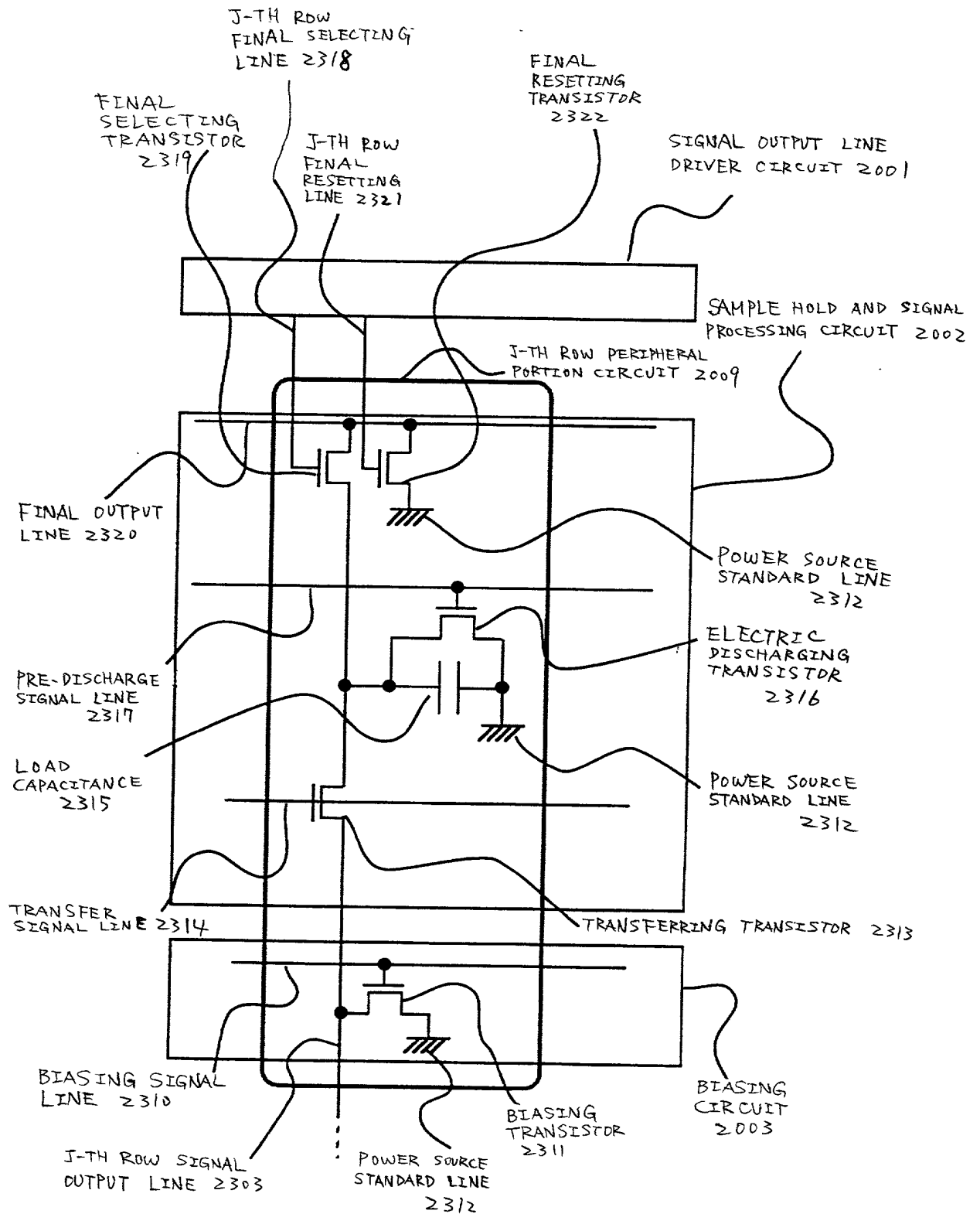


Fig. 23

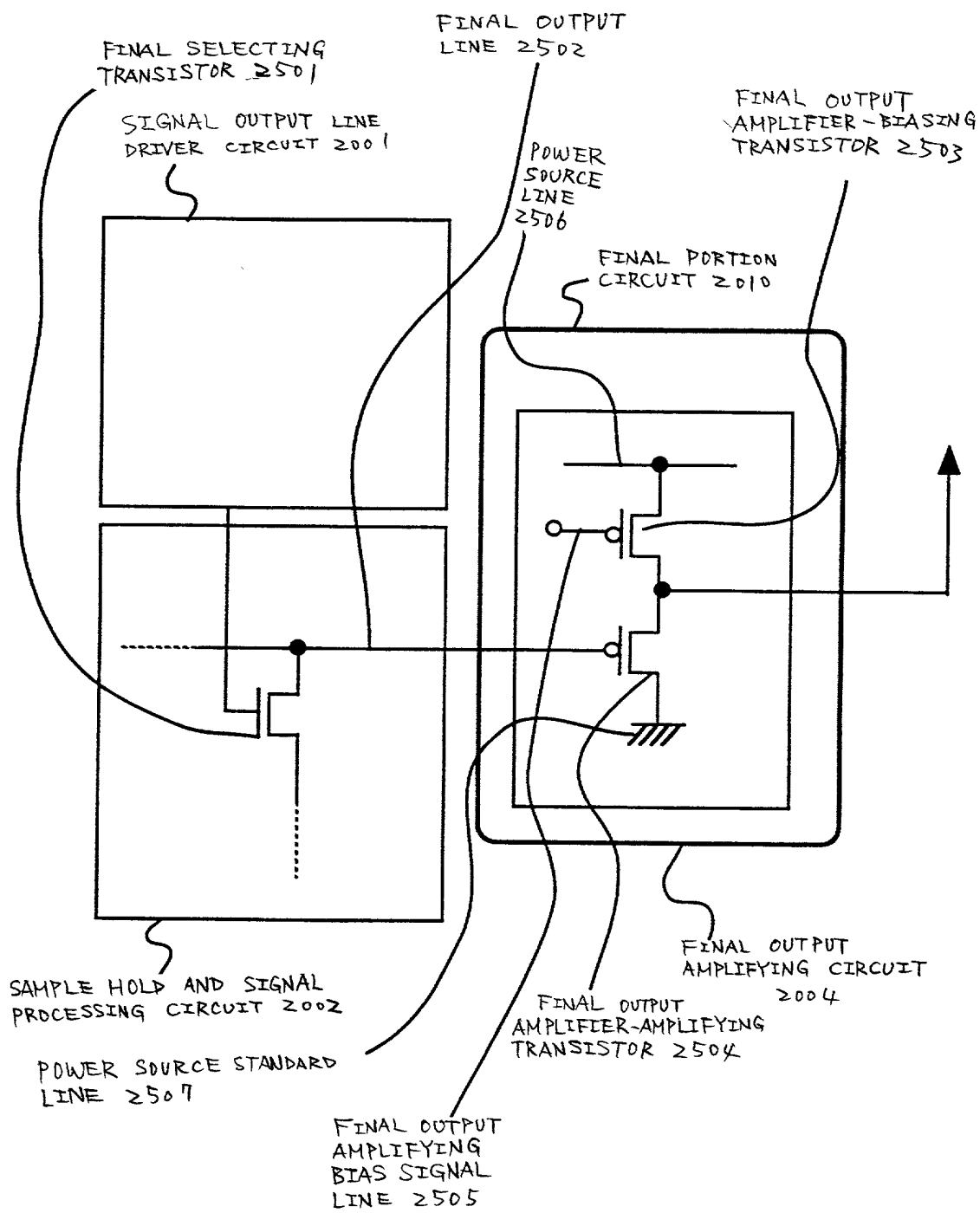


Fig. 25

Fig. 26

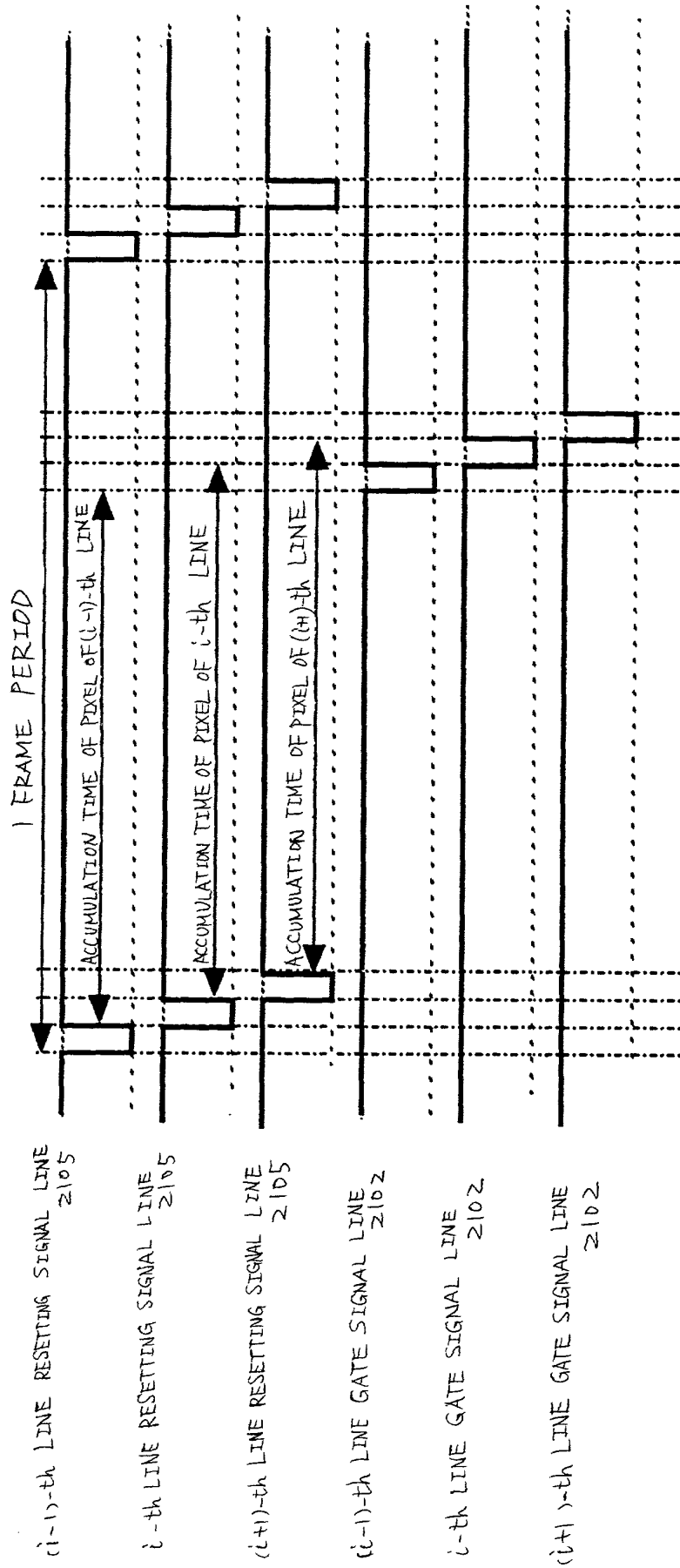


Fig. 27

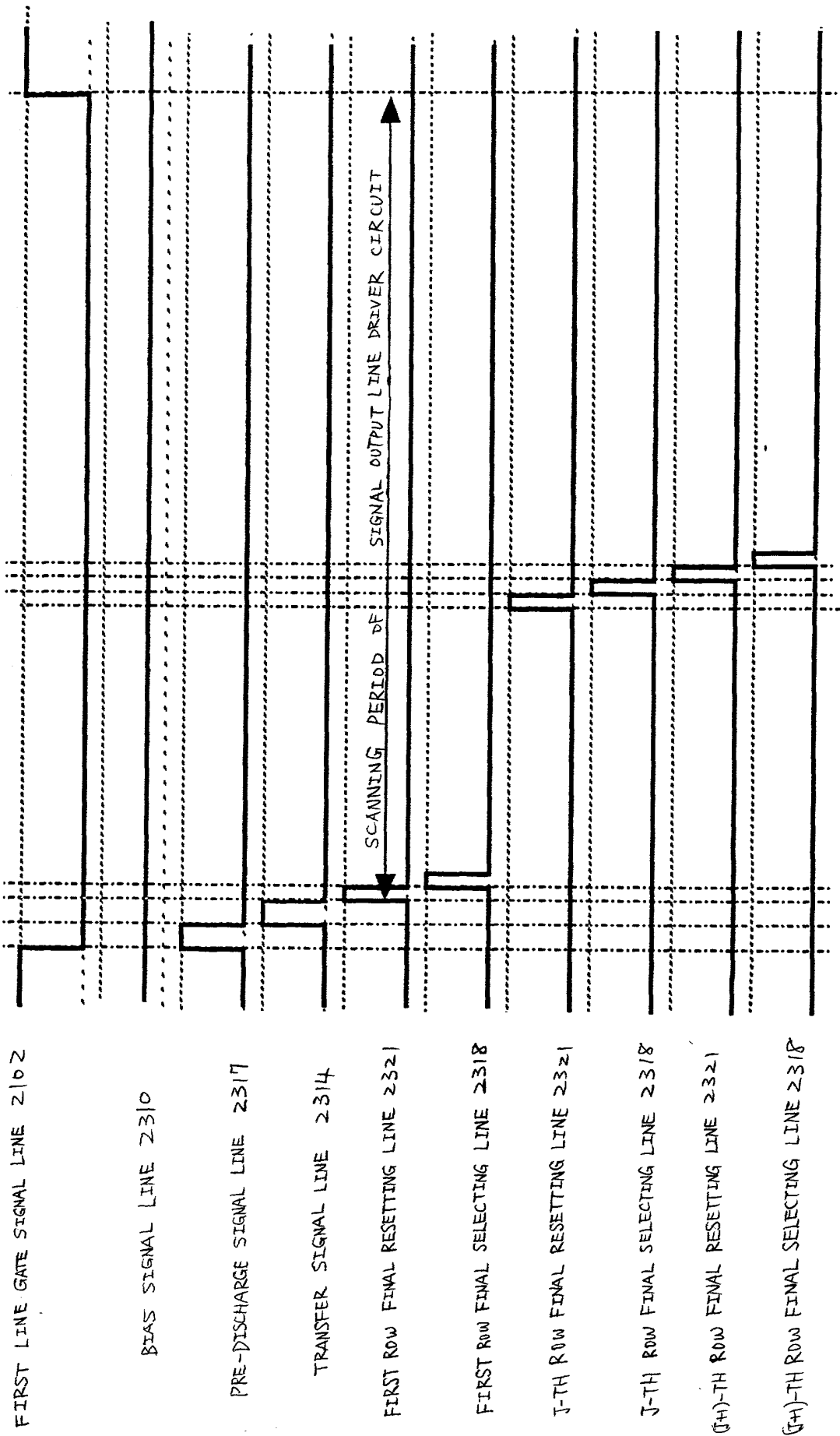


Fig. 28

I-TH LINE GATE SIGNAL LINE 2102

BIAS SIGNAL LINE 2910

TRANSFER SIGNAL LINE 2914

FIRST ROW FINAL RESETTING LINE 2921

FIRST ROW FINAL SELECTING LINE 2918

J-TH ROW FINAL RESETTING LINE 2921

J-TH ROW FINAL SELECTING LINE 2918

(J+1)-TH ROW FINAL RESETTING LINE 2921

(J+1)-TH ROW FINAL SELECTING LINE 2918

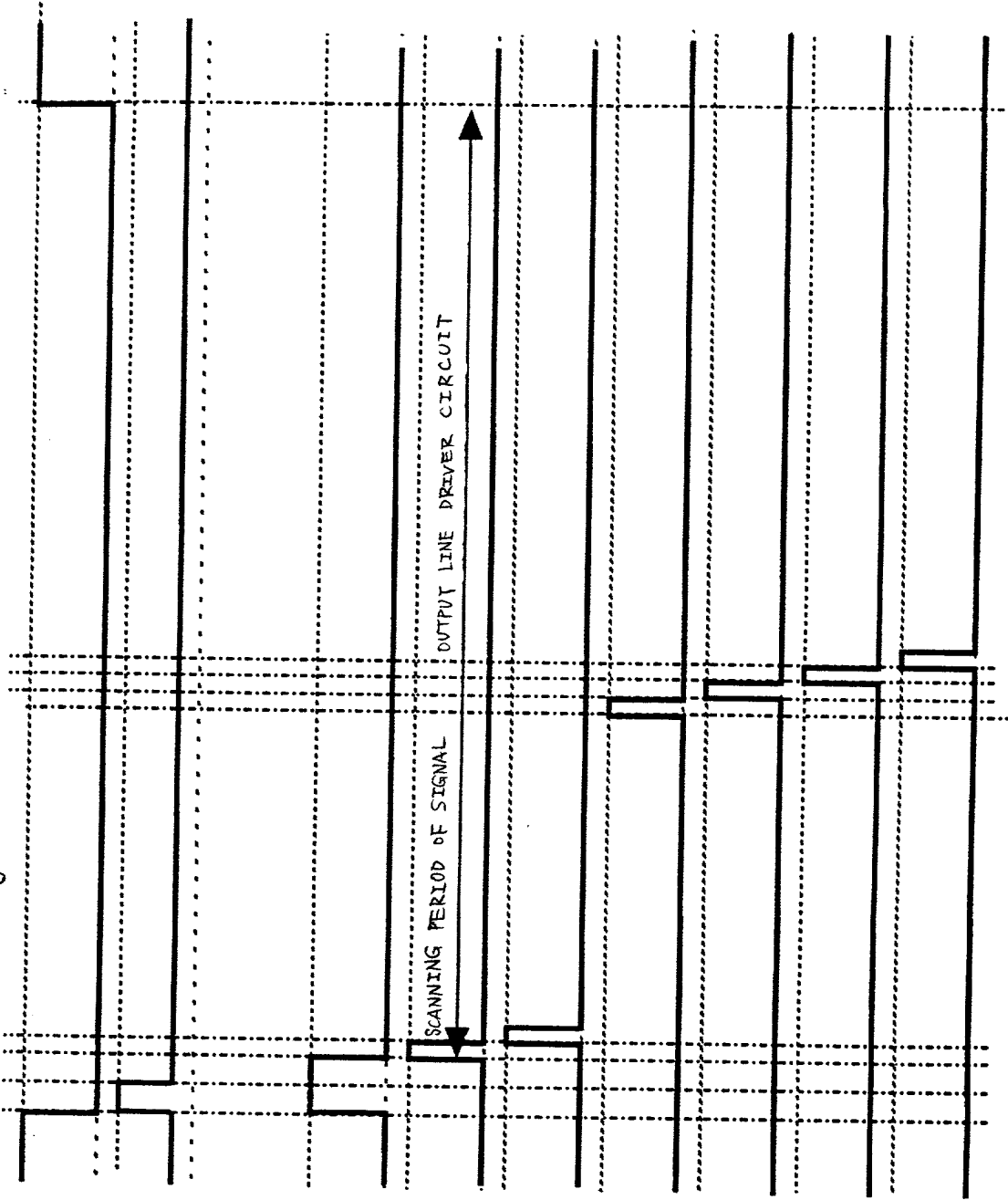


Fig. 29

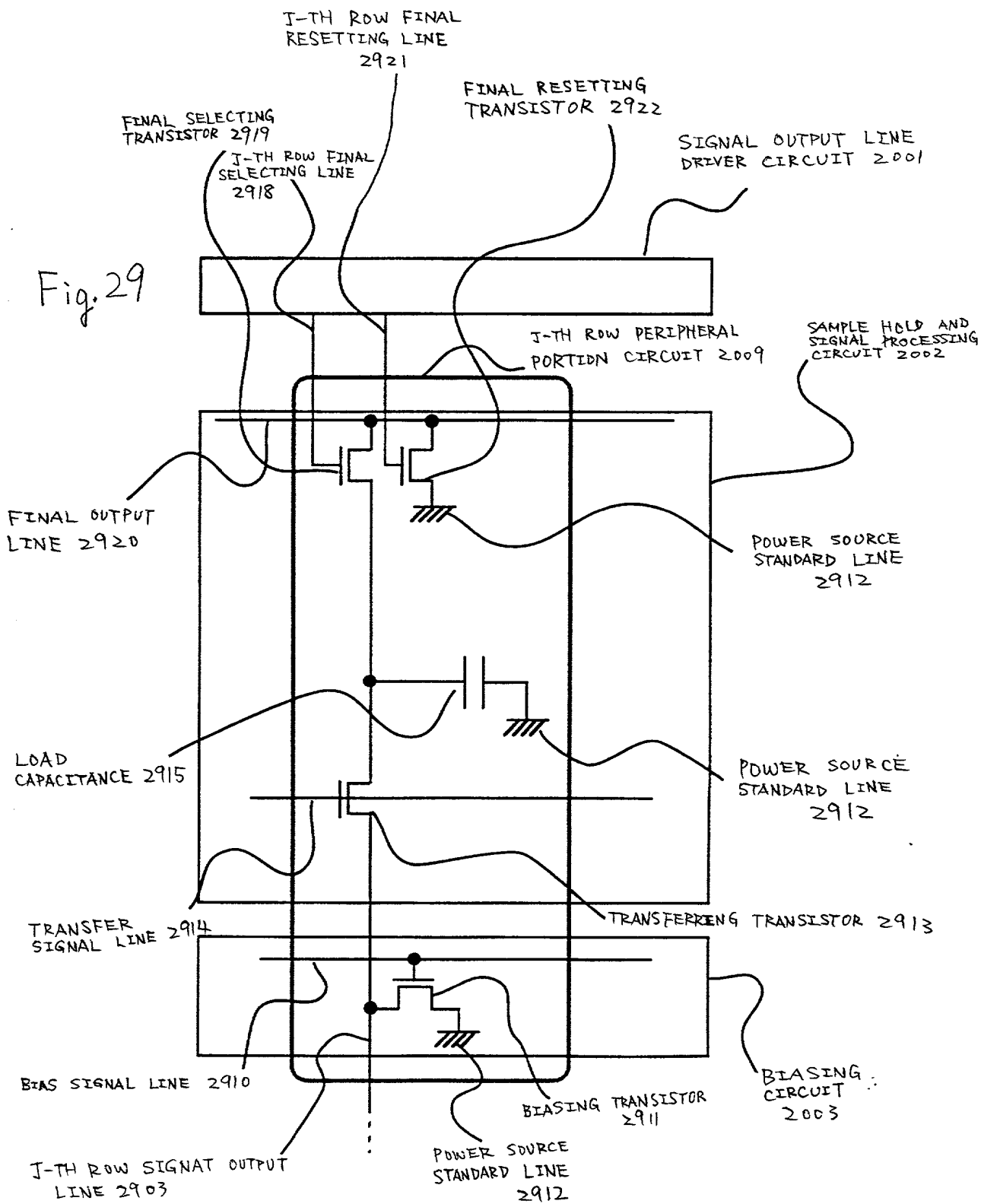


Fig. 30A CRYSTALLIZATION STEP

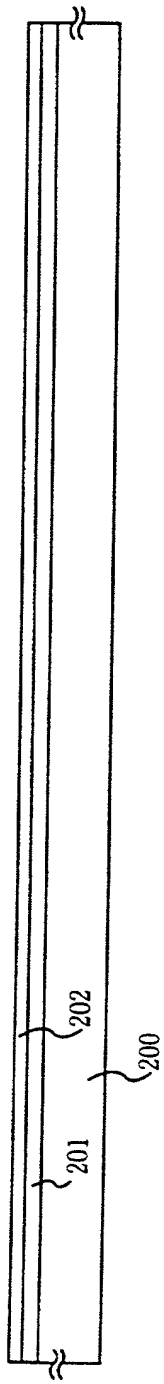


Fig. 30B

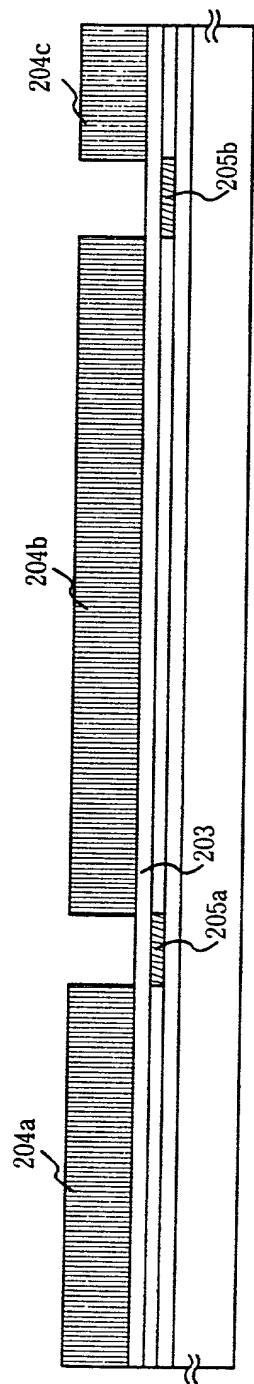


Fig. 30C LASER ANNEALING STEP



Fig. 30D

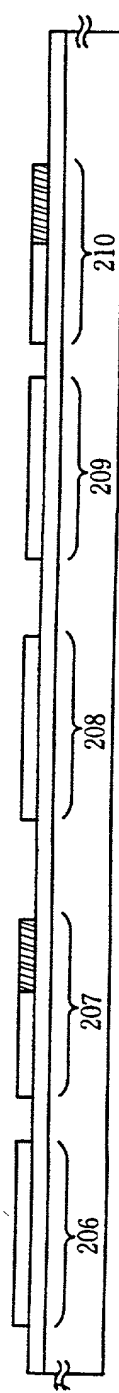


Fig. 31A

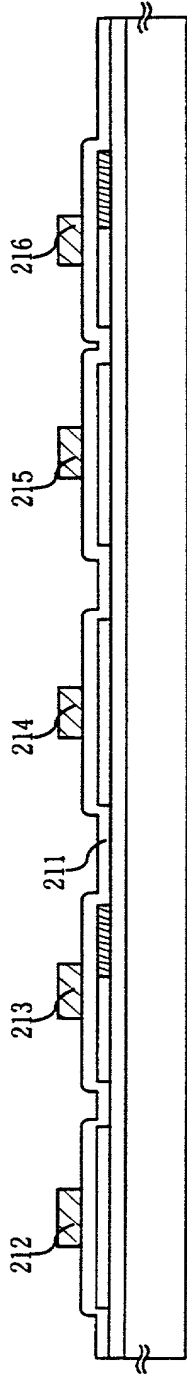


Fig. 31B

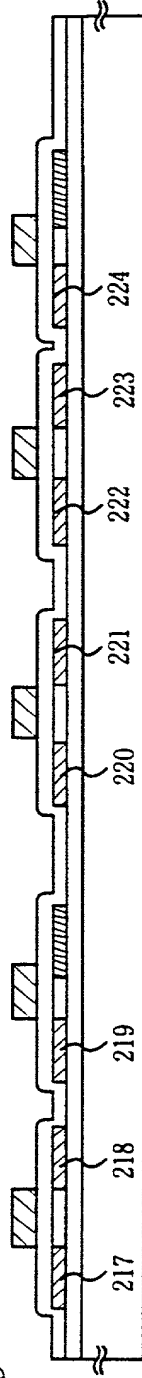


Fig. 31C

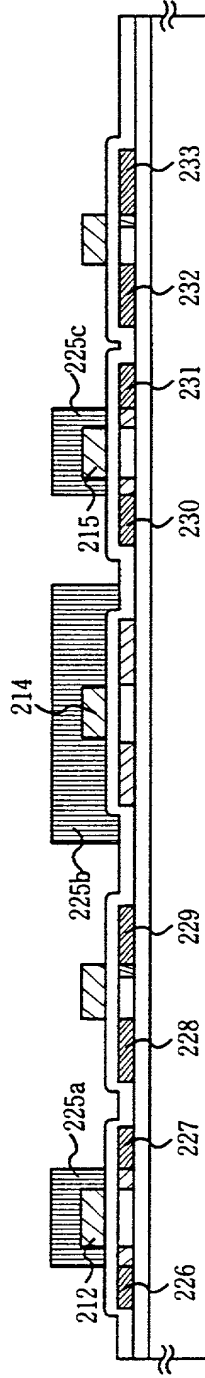


Fig. 31D

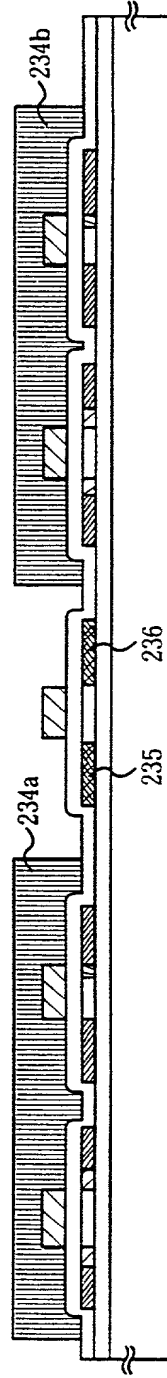


Fig. 32A

Fig. 32A

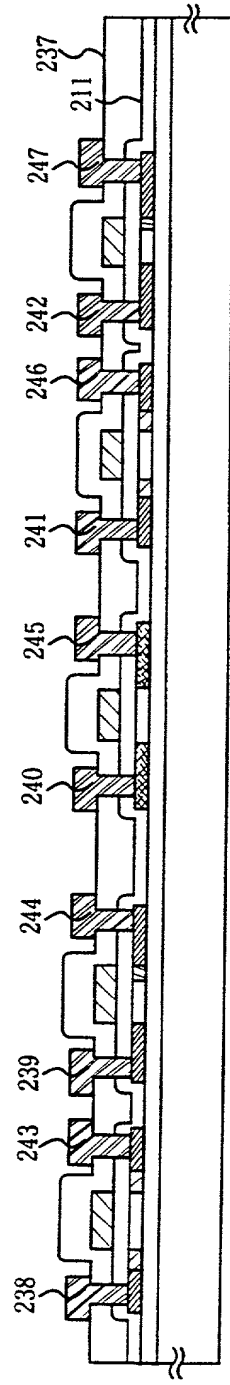


Fig. 32B

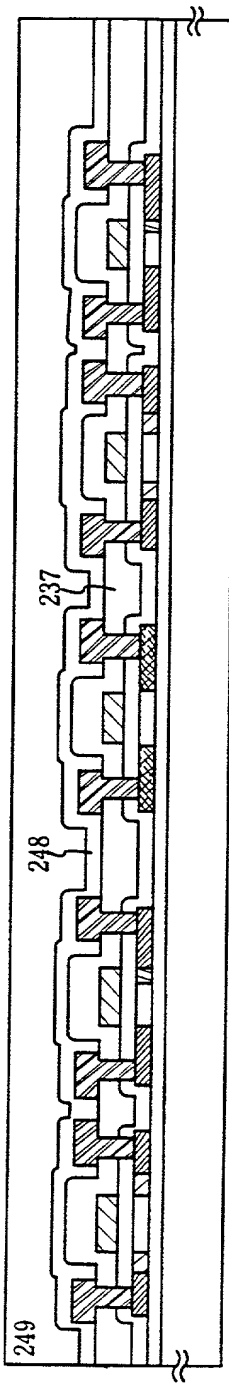


Fig. 32C

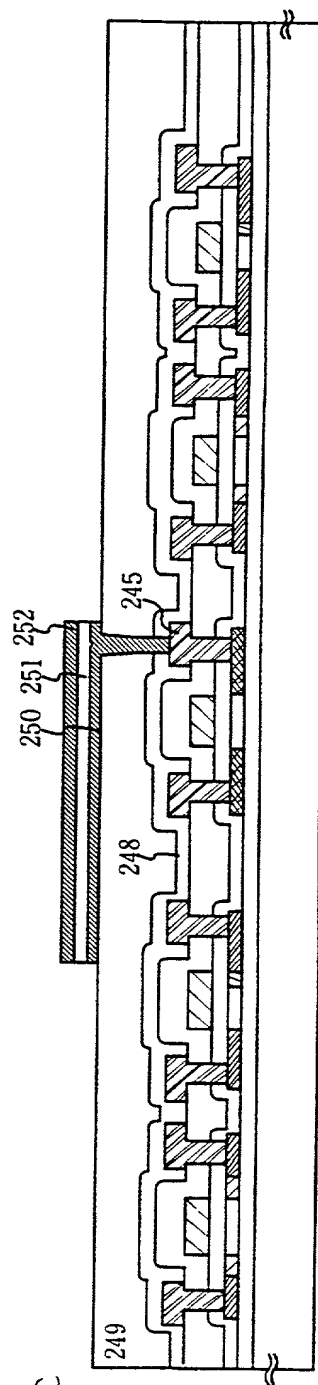


Fig. 33A

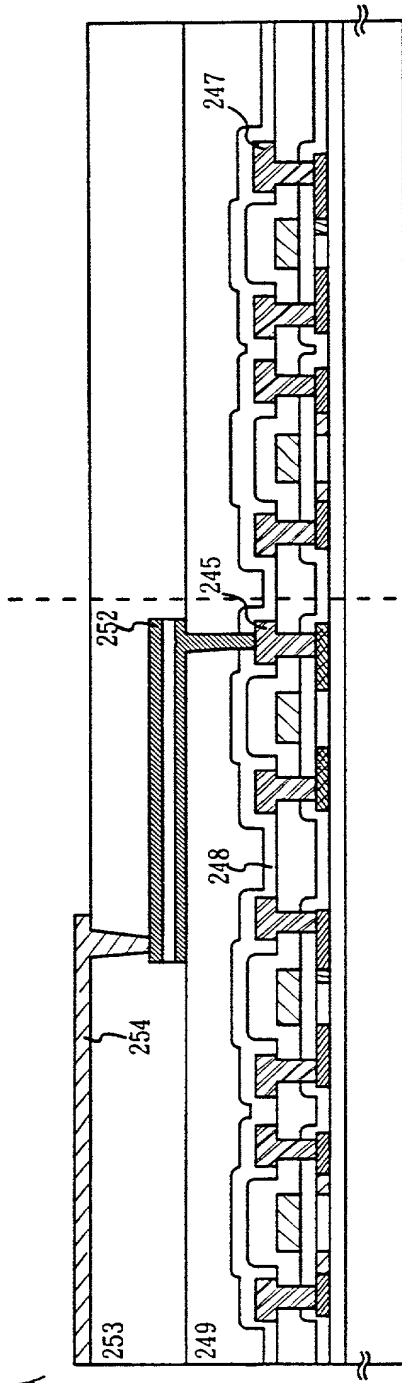
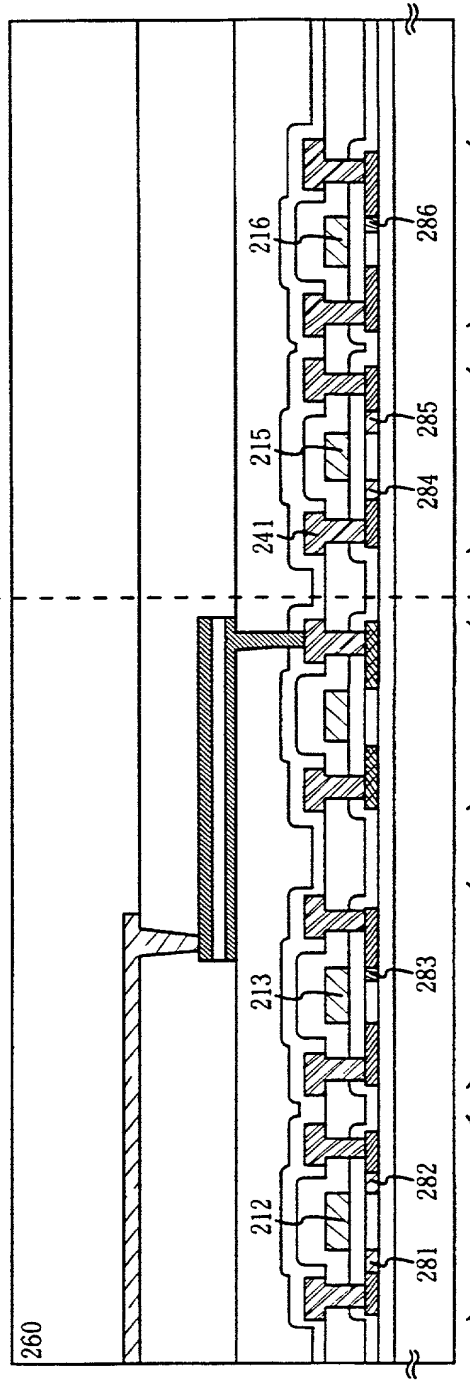
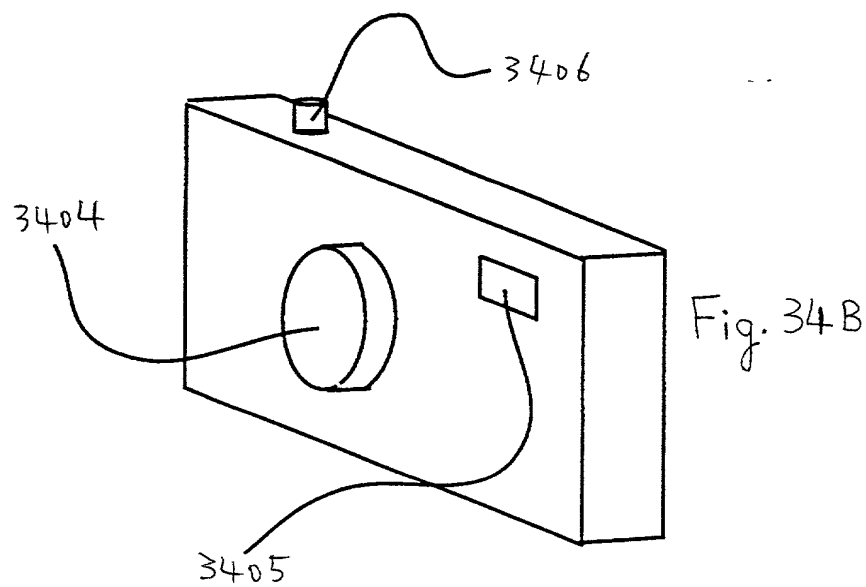
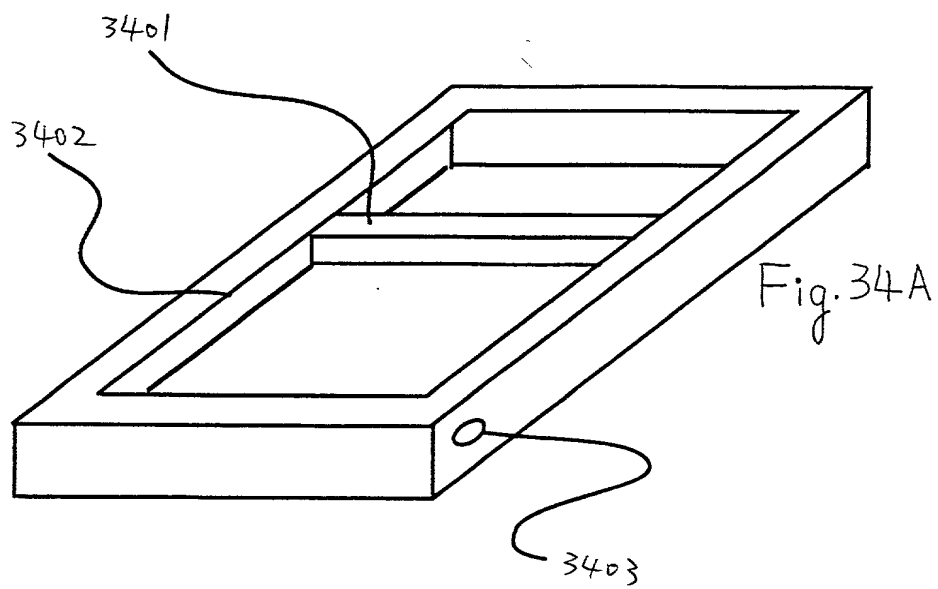


Fig. 33B





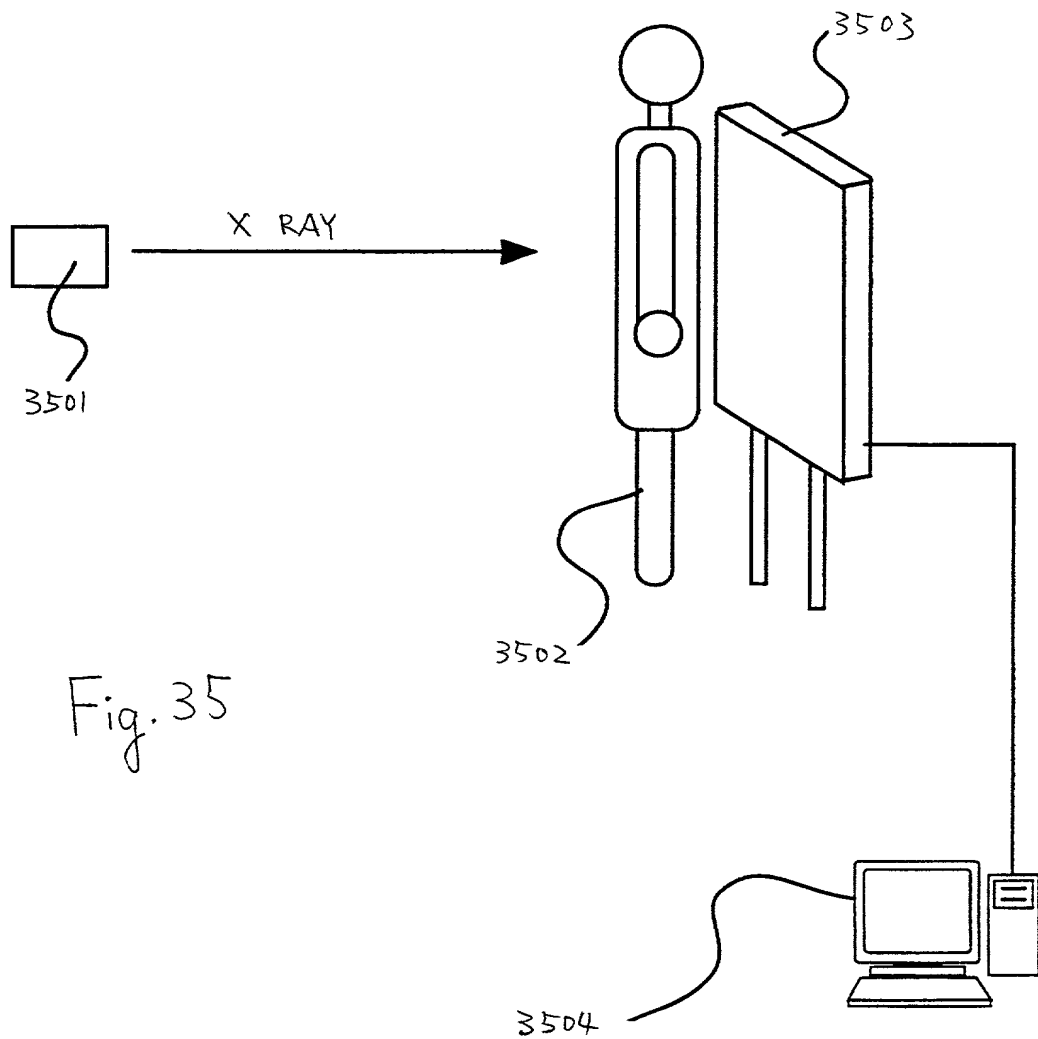


Fig. 35

